

The NATION'S SCHOOLS

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Public Schools Need Textbooks

*The level of teacher training throughout the
United States makes the textbook the school's
most important tool next to teaching personnel*

By WILLIAM JOHN COOPER, United States Commissioner of Education

NO ONE interested in the preservation of the democratic ideal in our national life can look on the situation in our public schools without concern.

Although operated on a more economical basis prior to the depression than similar activities in other fields of public and private endeavor, the schools have felt grievously the weight of curtailment. Average data which include the large metropolitan centers do not tell the entire story. They hide the terrific effects of partial curtailment and the complete elimination of public educational effort in many small towns, villages and rural centers. The departmental survey of last November indicated that more than 5,000 school districts had been closed. To present a composite picture, I am using certain index data for the country as a whole.

More Pupils—Lower Expenditures

By taking 1930 as the last year of normal expenditure, I find that the total enrollment increased 3 per cent, or that 848,685 more children were in school in 1933, an average of 282,895 per year. The average increase in the number of teaching personnel during the same period amounted to only 1,653. The average number of children per teacher increased from 29 to slightly more than 30. While the increase of one child per teacher may not seem large, it becomes much more significant when the

stationary rural areas are omitted and the larger increases in town and city schools are considered. Expenditures according to this index decreased 17 per cent. Summarizing briefly from gross averages, the number of children increased almost 300,000 per year, the number of teachers increased less than 600 per year and the total expenditures decreased \$354,890,384. Table I and the accompanying diagram illustrate this condition.

Public School Teachers Lack Training

I shall present only two significant points for consideration. The first of these is the training of teachers. Survey data of teacher preparation recently compiled by the Office of Education for 369,601 teachers out of the 882,018 now employed show a condition that is not well understood by many educators to say nothing of the interested layman (Table II). If I apply the percentage distributions of the survey to the total teaching population, and this is making generous allowance on the positive side, it means that 87.9 per cent of our elementary teachers have three years or less of college training. More than one-fourth, 27.2 per cent, have one year or less of college.

In the secondary schools the situation is naturally somewhat better. Teachers in junior high schools show 83.3 per cent with four years of training or less while senior high schools show 91.2 per

cent with five years of college training or less.

When it is further considered that the majority of our teachers are in the elementary division, the paucity of training possessed by our public school teachers is a subject for serious consideration. The complexity of the instructional process in correlation with the inadequacy of training in our per-

TABLE I—INDEX NUMBERS FOR CERTAIN PUBLIC SCHOOL STATISTICS, 1926-1933¹ (1926 = 100)

Years Ending June 30	Total Enrollment	High School Enrollment	Number of Teachers, Principals and Supervisors	Total Expenditures	Expenditures for Capital Outlays	Cost per Child Enrolled
1	2	3	4	5	6	7
1926	100	100	100	100	100	100
1927	101	102	101	104	97	103
1928	102	104	103	108	93	106
1929	103	111	104	111	92	108
1930	104	117	106	114	90	110
1931	105	126	107	114	78	109
1932	106	135	108	108	58	102
1933	107	143	106	97	37	90

¹Information taken from Office of Education and National Education Association surveys; compilations made by research division of the National Education Association.

sonnel indicates the serious problems confronting our public school administrators.

The cultural background and technical training of the average public school teacher in the United States are low in terms of our problems and extremely low in comparison with the professional requirements of teachers in France, Germany and the Scandinavian countries. To anyone familiar with educational procedure it must be apparent that our average public school teacher is not only inadequately prepared but completely at a loss without supplementary instructional tools. The necessity for adequate supervision and for sufficient supplies, books and equipment is too often overlooked even by our professional educators. Many university professors, acquainted as they are with only the better trained segment of the teaching population, underestimate the vital importance of these supplementary tools and of supervision. I have heard professorial opinion expressed on numerous occasions within the last three years with respect to the need of maintaining teacher salaries and partially or completely cutting supplementary service, regardless of the actual requirements of the situation.

Whether we like it or not, we must admit that under present conditions of teacher preparation in actual field practice, the textbook and the library book are, next to the teacher, the most important single instructional tool in public education in the United States. No study of curtailed expenditure today is possible without giving grave consideration to the slurring of the need for textbooks, library books and general educational supplies. The

preparation of teachers, the increase in teaching load, the severe economic competition for positions that is bringing more inadequately trained teachers into service, all point to the fact that our educators must realize the extravagance and waste that curtailment of book, supply and equipment budgets is forcing on our public schools.

Efficiency is not indicated by the smallness of the total amount of money spent per child for instruction. Educational procedure has no comparison or counterpart in industrial life. Instructional efficiency must be determined on the basis of results. Surveys have indicated that the best instructional benefits or terminal results have been attained when per capita expense is not low.

Textbooks Have Always Suffered

My second point grows out of the first. With these considerations for background what actually has happened with respect to textbooks, supplies and equipment? I shall attempt to answer the question for textbooks briefly.

It is evident that school boards in many cases are not giving the thought that they should give to this subject. They are making cuts in those places where least will be said, regardless of the effect that these cuts may have. There is hardly a superintendent in the United States who does not know that even in boom times his book equipment was less adequate to the school needs than any other thing connected with his school system. But

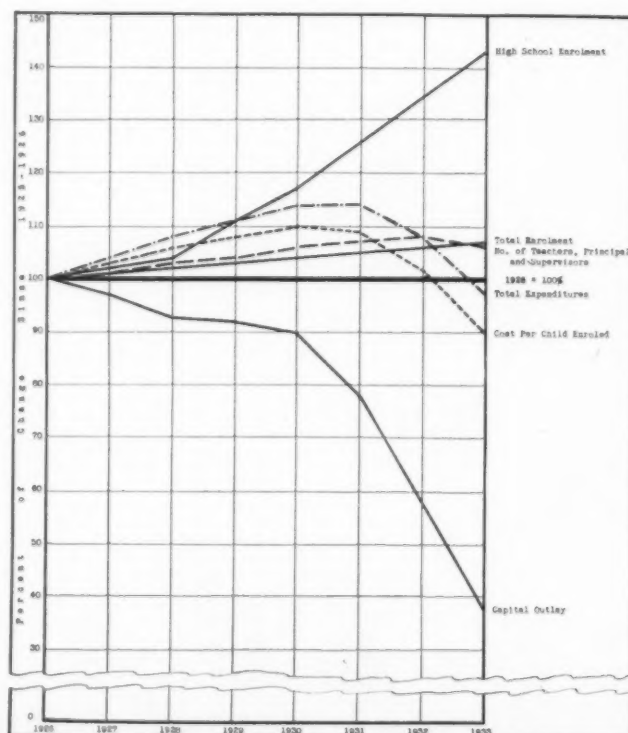


Diagram showing index of change in certain school statistics.

TABLE II—HIGHEST LEVEL OF TRAINING OF ELEMENTARY AND SECONDARY TEACHERS IN PUBLIC SCHOOLS OF THE UNITED STATES, SCHOOL YEAR 1930-31¹

Column Headings									
1. Level of Training.					5. Teachers in Cities 2,500 to 9,999.				
2. Teachers in One and Two-Teacher Schools in Open Country.					6. Teachers in Cities 10,000 to 99,999.				
3. Teachers in Three or More Teacher Schools in Open Country.					7. Teachers in Cities 100,000 or Over.				
4. Teachers in Villages Less Than 2,500.					8. Grand Total.				
					9. Junior High School.				
					10. Senior High School.				
Per Cent Distribution									
Type of Teacher	Elementary School Teachers							Secondary Teachers	
1	2	3	4	5	6	7	8	9	10
Nongraduate of elementary school	.1		.1						
Graduate of elementary school only	.6	.4	.3	.1	.2	.1	.3	.2	.1
One year of high school	.4	.2	.2		.1	.1	.2	.1	.1
Two years of high school	1.0	.6	.4	.3	.2	.2	.5	.2	.1
Three years of high school	1.1	.6	.6	.5	.5	.5	.7	.3	.1
Four years of high school	9.0	2.7	2.5	2.3	2.5	2.1	4.0	1.1	.5
Six to twelve weeks of college	9.9	3.4	2.4	1.3	1.0	.6	3.6	.6	.2
Half year of college	6.1	2.6	2.1	1.1	.8	.5	2.4	.4	.2
One year of college	33.6	17.9	12.4	6.9	5.2	5.1	14.5	3.2	1.1
Two years of college	28.7	47.0	54.0	55.1	55.1	47.0	46.2	17.5	4.4
Three years of college	6.0	13.4	15.7	18.8	19.7	21.8	15.5	16.0	6.1
Four years of college	3.0	10.2	8.4	12.2	13.0	16.9	10.2	43.7	58.1
One year of graduate work	.4	.8	.7	1.2	1.3	3.3	1.3	12.1	20.2
Two years of graduate work	.1	.2	.2	.2	.3	1.1	.4	3.1	5.9
Three years of graduate work					.1	.4	.1	.8	1.5
More than three years of graduate work						.3	.1	.7	1.4
Number involved	61,299	13,550	51,126	26,946	45,278	50,449	248,648	36,186	84,767

¹These data were compiled as a phase of the National Survey of the Education of Teachers, and were released March 16, 1933.

because even in boom times superintendents were everywhere being asked to keep down the expenditures for schools, and since the books could offer no objection to any cuts which might be made in the sums provided for their purchase, there was always the inclination to take from the tentative budget set up for this item a goodly part of the amount that authorities were insistent should be cut from the entire tentative budget before it could be approved.

What a Questionnaire Revealed

Knowing this, and knowing how important books are, and feeling certain, too, that radical cuts had been made in those budgets during the past two years, I sent a questionnaire to various publishers, asking them to give me the figures showing the business that each had done with the schools during the periods July 1 to December 31 of each one of the three preceding years—1930, 1931 and 1932. Fifty-four companies responded, which clearly indicates that nearly all of the business is represented by the following figures:

July 1 to December 31, 1930 . . \$30,098,024

July 1 to December 31, 1931 . . 26,165,854

July 1 to December 31, 1932 . . 20,418,098

First, let me call attention to the very small expenditure, relatively speaking, in that boom year 1930, during which, I am informed, schools bought more books than in any previous year in history.

While it is true that that figure covers only the expenditures for six months, it is, as everyone knows, the six months during which the great bulk of the purchases are made, and even were that figure doubled, think how small it is compared with the total expenditures for public schools, which aggregate something over two billion dollars.

Second, I wish to emphasize how important a part those books play in the education of the child. If, as stated earlier, all our teachers were as well prepared as are the teachers in the European schools, I might have less to say about this item but in our public schools, where the textbook is regarded as fundamental, and where it plays an important part in the lesson, it is an essential part of the school.

Third, those expenditures have been radically reduced during the past two years. There are few items of school expenditure, no matter how unimportant, and in most school systems there is no item of expenditure which has been reduced in any such degree.

Robbing Children of Their Opportunities

I am using this only as an example, as it ought to be apparent to anyone that what has been done in cutting book expenditures so radically is to rob the child of his educational opportunities to a serious degree and at a percentage of saving so small as to be inconsequential. It is evident that in the case

of books it becomes the duty of every school superintendent and of every board to canvass the situation and see how much his book budget must be increased this year in order to give children anything like an adequate equipment with which to do the work.

In the same way all items on the school budget should be evaluated. Savings must be made in most school systems; that is acknowledged; but some savings can be made which affect few children and affect them only so far as the nonessentials are concerned. Other savings can be made that are large in amounts but small in percentage as compared with previous expenditures. Savings of consequence can be made by giving teachers of the essential subjects better tools with which to do their work, thus enabling those teachers now employed to carry the extra load due to increased enrollment without making additions to the pay roll.

I make the plea that superintendents and boards exercise careful thought to see what the effect will be of each adjustment which is made in the budget, whether up or down. Always the idea should be borne in mind that we may not always have been right in the past in the division that we made of monies available, and that now, faced as we are with the necessity of reducing expenditures as a whole, we should check each item and ascertain its relative importance, cut out first those things of least importance, and allocate the remaining funds in such a way that the maximum savings may be effected with the minimum of harm.

Extraclass Work of Kindergarten and Primary Teachers

By LEILA STEVENS

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A first grade boy was asked in a study of children's interests what he would like to learn about. His problem was, "What do teachers do?" Many people have wondered. The following describes the extraclass school work of ninety kindergarten and primary teachers in seven different cities during two seven-day periods:

The teacher's average extra time expenditure per day for a typical week and the last week of the semester, both seven-day weeks, amounted to two hours and eleven minutes. The primary teacher averaged two hours and twenty minutes daily, and the kindergarten teacher, two hours daily.

The extraclass work was done during four different periods. The amount of time spent during each period was as follows: during the school day,

80.3 per cent; in the evenings of the school day, 8.5 per cent; on the free afternoon (the last afternoon of the semester when children are dismissed but teachers are on duty), 6.5 per cent, and on Saturday and Sunday, 4.7 per cent.

The following four types of work were done: preparation for instruction and remedial work; teacher-in-training activities; clerical work, and physical care of children.

English a Neglected Subject

The percentage of total reported time that was allocated to preparation in the different subjects was: reading, 22 per cent; art, 11.4 per cent; arithmetic, 4.4 per cent; English, 4.3 per cent; spelling, 2.5 per cent; music, 1.3 per cent, and handwriting, .6 per cent. Of the whole time spent in remedial work that given to reading was 66.6 per cent; spelling, 10.3 per cent; art, 9.8 per cent; arithmetic, 6 per cent; handwriting 4.4 per cent, and English, 2.8 per cent. It is significant that English, a subject taught by all the teachers and a subject used almost constantly by the children, received less time both in preparation for instruction and in remedial work than arithmetic, a subject taught by only twenty-nine of the ninety reporting teachers and one that is seldom used by the children in comparison with English.

The activities related to the in-service teacher training programs of the different cities varied widely in extent and kind. In one city the reporting teachers spent almost three times as many hours in these activities as the teachers of another city. The four common types of professional improvement, ranked from highest to lowest, according to the amount of time devoted to each improvement activity, were: meetings, conferences and other communications, professional study and plans. Of the professional study, one-fourth was university accredited study and three-fourths was self-directed or directed by a supervisor.

The amount of time devoted to clerical work by the teacher varied widely. One school system operated on two-thirds the clerical time required in another system. During the typical week 6 per cent of the time was given to clerical work, while in the last week of the semester, in schools having the midyear promotion, 32 per cent of the time was expended on records and reports.

The physical care of children was of three kinds: individual care of children; supervision of groups, and classroom housekeeping. The teachers of one city spent twice as much time in these activities as the teachers of another city. The kindergarten teachers and the primary teachers allocated about the same amount of extraclass time to caring for the children physically.

Are Your School Buildings Earthquakeproof?

The California disaster has set school authorities thinking and today they are rebuilding, repairing and correcting their structures to withstand future disturbances

By HARLAN HAMMOND EDWARDS, Consulting Engineer, Claremont Colleges, Claremont, Calif.

Poor design, faulty construction, and lack of adequate legislation in building codes may be named as the principal causes of damage to buildings in areas affected by the recent Southern California earthquake. Reenforced concrete, frame and stucco or properly designed and tied structures of other stable materials withstood the quake with little or no damage, while unreenforced brick, hollow tile and cement block walls failed utterly.

To place the blame for the existence of unsound buildings upon any group or groups of persons is

impossible. Responsibility rests, in the last analysis, upon the now drooping shoulders of Mr. John Taxpayer, who, ignorant of the principles of sound construction, has complained about the high cost of building, has insisted upon quantity and appearance rather than upon quality and stability, has opposed as unnecessary and unwarranted all legislation designed to correct building codes, and, by harassing public officials in various ways, has made difficult adequate improvement, if not enforcement, of existing codes in his community.



Veneered walls of this type are a source of danger in case of an earthquake.



You may wonder if this condition is characteristic of only one area, or if it is chronic throughout the country. If you will examine your own situation in the light of failures encountered, comparing characteristics of construction, I believe you will find many structures which would not withstand earthquake shock or the buffeting of high winds such as occur in cyclones or tornadoes. Had the California quake happened a few hours earlier or later, the loss of life would have been appalling, and would have placed this event among the world's major disasters. Who knows when the next quake will come? Or where? That such disturbances are not limited to the West coast area, or even to the Western states, is well known among seismologists.

Earthquakes of recent times have all taught the same lessons. Yet how many communities, school boards, and individuals have strengthened their present buildings or have built better ones? A grave responsibility rests upon persons in public life whose inaction or neglect endangers the lives of thousands of children who enter these buildings not by choice, but because they are required by law to attend school.

California's lawmaking bodies are now enacting legislation requiring all building construction in



The two buildings shown on this page are of identical design. The ornamental work has crashed on one and on the other it has cracked, illustrating an inherent weakness.

unincorporated areas and cities throughout the state to conform to definite and adequate requirements, and placing all schoolhouse planning and construction under rigid state control. School authorities are thoroughly alert to the situation and are rebuilding, repairing and correcting their structures so that they will be safe.

Due to apparently inevitable characteristics in design, the school building is inherently of a weak type. High ceilings and large rooms with many high windows create a structural shell dynamically unable without strong stiffening ties to resist lateral forces. Classrooms, shops, libraries, gymnasiums, laboratories and auditoriums all contribute to the schoolhouse architect's difficult problem of gaining stiffness and stability at minimum cost.

Entrances to such buildings have usually been embellished with ornamentation, generally of terra cotta, brick, natural or cast stone. This is heavy, often insecurely fastened and so placed that a sharp, heavy shock will loosen and catapult it down upon persons escaping from the building. What has been a thing of beauty becomes an instrument of death. High, unbraced parapet walls also have shown their uselessness and have caused injury and death wherever they existed in damaged zones.

These defects in our design practice, which are countrywide, should and must be eliminated so that exits from public structures may be made absolutely safe. Embellishments, if they must exist, can be cast in place monolithically with a reinforced concrete structure, becoming an integral part of the structure and not a hazard. Architectural standards are changing, and the "new deal" in design promises greater safety.

Reinforced Concrete Is Safe

Reinforced concrete buildings generally were unharmed by the earthquake. Built of solid concrete with ample steel to resist tensile forces, they sway as elastic units with the shock. Where due allowance has not been made for the severity of the blow, diagonal shear cracks appear, sometimes varying from the usual diagonal line to follow weak planes in the wall, caused by a careless construction operation. The building does not fail, however, and can be repaired at moderate cost. Parapet walls in concrete buildings are built as a unit with the rest of the structure, and do not present the hazard of falling materials. Reinforced concrete is recommended for buildings of all heights. They should be properly designed by a competent structural engineer.

Wood frame buildings, particularly those of frame and cement stucco, have withstood earthquakes in all areas in good fashion. Aside from a few cracks and loosened interior plaster, such

buildings, both one and two stories in height, have in the most severely shaken districts given good account of themselves and are universally recommended for low cost one-story schools. Thorough bracing in the frame of the building is essential and cannot be replaced in value by exterior board sheathing.

Ample Ties and Braces Are Imperative

Such buildings, however, must be securely fastened to concrete foundations by bolts cast into the concrete, else the horizontal movement may cause them to shift and perhaps drop off the wall. This in a number of instances was the cause of serious damage to carelessly built residences and schools. Buildings placed on a brick, block, or stone foundation often are similarly damaged through shattering and collapse of the unit materials. Underpinning supporting a building between the floor joists and a low foundation is often left unbraced, resulting in the same type of movement and damage. All this, again, points to the need for ample ties and braces.

Brick buildings, well designed and braced by thick walls and heavy buttresses and held together by reenforced concrete bands or bond beams extending entirely around the building at each floor level or more often, have to a large extent withstood the shocks. Where this care in design was lacking, however, the walls and even the entire buildings were reduced to worthless wreckage.

Let us consider one instance of a large building containing an auditorium, all of brick except the frame of the stage walls and the balcony, both of which were of reenforced concrete. The building proper, though well constructed with good mortar, lacked concrete and steel ties and was thoroughly shattered through breaking brick rather than mortar failure. The concrete portions, however, showed little damage. For the sake of economy, this concrete skeleton frame was stopped some fifteen feet below the roof, which was itself reenforced concrete. The intervening space of plain brickwork was thoroughly broken up, requiring demolition of the roof and the upper walls and rebuilding.

Other brick or tile walled one-story structures at this school were completely shattered or demolished, creating a total estimated damage in the district of some half-million dollars. The school district was already bonded to the limit by original construction, which limit, due to recent reduced assessed valuations, is now exceeded. Many schools find themselves in this predicament. A concrete or other well designed structure would have cost little if any more at the time the building was erected.

Another building in this district was constructed

with a reenforced concrete bond beam on three sides, while the fourth side, for some unknown reason, was built of plain brick. This untied wall gave way completely. Brickwork above the existing bond beam was generally shattered and moved. That below was seldom found so. The walls were braced by heavy brick buttresses, lending stability to an otherwise unsound design.

Near one of the heavily damaged buildings was a smaller frame and stucco building housing a number of heavy printing presses. Not a crack or sign of damage was found. Undisturbed oily dust



This shows the damage done the auditorium at the Compton Junior High School. The concrete bond beam extended to each corner, but did not connect across the rear.



marks on the floor around the feet of the presses, however, showed that floor and press had parted vertically, instantly followed by horizontal motion, coming together again some six to eight inches away, thereafter moving horizontally only, as shown by zigzag and circular scratches on the floor.

Mortar in brick buildings was often of poor quality. In old structures was found lime mortar that could be crumbled in the fingers. Newer structures had mortar likewise easily powdered, due either to lack of cement or to the use of dry brick

which sucked the moisture from the mortar, stopping further hardening or hydration of the cement as the wall became dry. Additional water, which should have been supplied by sprinkling in order to permit the cement to harden to a greater extent, was probably not provided. Consequently the bind-



The Compton Junior High School shop. The long unsupported span could not stand the strain of the quake.

ing action of the cement was lost and a weak mortar resulted, producing a wall easily shattered.

The use of face brick, or brick of a pleasing color and architectural value as a veneer on a brick wall, was found to bring about a weakened condition, due to insufficient bonding. This lack of frequent bond courses or headers to tie in the outer brick with the inner was perhaps deliberately planned to secure architectural effect, and the so-called corrugated brick ties were useless under such conditions. These veneers loosened and fell off in some cases, exposing a shocking condition of poor workmanship. Veneers on frame structures likewise were shaken off.

Structures having block-type exterior walls with wood frame and plaster interior walls and a wood roof failed insofar as the exterior was concerned, but often this failure left the interior largely unharmed. Here, then, unless the walls had collapsed, letting the roof down, repairs were relatively simple. In one-story buildings the ceiling and roof construction were shored up and rebuilt with wood frame and stucco. In two-story structures, requiring greater rigidity and strength, floors and roof were shored up and a reenforced concrete wall, properly braced and tied, placed around the exterior in place of the original brick or tile enclosure. On all damaged buildings to be rebuilt, and on all others not exposed to the heavy shocks, structural analysis is recommended to determine the repairs required to enable them to withstand shock. This analysis should be made by a competent structural engineer. Thorough bracing and cross bracing in the roof plane acts to tie the upper walls together, to reduce the lateral throw of the walls, and also to reduce twisting during heavy shocks.

Brick chimneys were a common source of dam-

age, toppling over on roofs and walks or crashing into buildings. On many school buildings chimneys stood near large skylights, stairways or rooms usually occupied during school hours. In one instance a chimney weighing many tons crashed through the roof and through the ceiling of a second floor classroom and stopped in a toilet room on the first floor.

Covered walks or arcades built of brick or stone were usually shattered or leveled. Acting like heavy weights on stilts, they went down in heaps, endangering everyone in the vicinity. Because of their weight, they acted as battering rams, tending to demolish building walls. Those left standing were ordered removed, to be replaced later by wood frame construction.

From the relative destruction of similar buildings in different areas it was evident that differing degrees of destructive force had been encountered. Examination of the entire area showed that the intensity of shock varied with the distance from the earthquake's epicenter, while at equal distances, for structures of similar type, the greatest damage was done to those built on soft, alluvial soils, and the least to those built on harder formations. This was illustrated by one instance of three structures identically built from the same plans, and another instance of two, all separated by several miles from each other. Failure cracks occurred at the same locations in all these buildings, but actual failure was much further progressed in one than in the others.

The report of the coroner's jury of building ex-



This shows why lives are endangered by ornamentation and untied gables at the exits to buildings.

perts and seismologists sums up the effects of the quake and the lessons to be learned from it:

"An outstanding fact about this earth movement was the large percentage of buildings which came through without serious damage; fully 78 per cent of the buildings in the affected area suffered only inconsiderable damage, and another 20 per cent suffered no damage which could not be readily repaired.

"Wood frame buildings, whether finished in wood or stucco, generally suffered only minor damage. A considerable portion of the damage to these structures which were otherwise structurally sound resulted from failure to properly anchor and brace them to their foundations. Chimneys on all types of buildings were generally damaged or destroyed, except when reenforced.

"Buildings of reenforced concrete and steel frame buildings suffered very little other than in-



These marble shower stalls in the gymnasium were not braced or anchored against lateral forces.

cidental damage, most of which could have been avoided by proper design.

"Masonry buildings were the principal sufferers and their failure occasioned the principal loss of life. Damage was mostly confined to those built with poor quality of lime mortar, inadequate bonding and anchoring, or of inferior workmanship, and built to designs which took no account of horizontal forces.

"School buildings were generally of masonry walls, wood floors and roofs, large inside areas and heights, as well as extensive window openings, and with numerous parapets and ornaments. They suffered serious damage not only because of inadequate provisions for lateral stresses but in an important degree because of utter lack of efficiency in workmanship. No serious damage was done to reenforced concrete structures.

"Parapet walls were conclusively shown to be the weakest and most dangerous element of buildings as constructed, and this experience points to the positive necessity of eliminating or so designing and building them that they will stay in place under earthquake conditions. Various devices and materials used for architectural ornamentation of buildings as constructed, especially on parapet walls and over entrances, were shown to be a serious hazard to human life. It was an outstanding fact that the greatest hazard from falling material was at the entrances of the buildings and

along the sidewalks; and since it is an almost irresistible impulse with many people to run out of a building during an earthquake it is a fact that the places where people were most likely to go or to be during the excitement were most dangerous.

"If provision for safety involved burdens not economically justified or if adequate protection imposed restrictions not commonly encountered in good practice there would indeed be cause for concern. Happily, this step to every assurance of safety to life and property is one of relatively little cost, and is in fact the step which normally should be taken by communities which seek adequate protection from the elements. This policy recognizes that fact that any structure composed of separate and unrelated substances must, for security against stresses, have those substances tied together, thus forming a unified, undivided, whole.

"Damage was greatest in cases where emphasis was placed upon quantity rather than quality, effect rather than stability, or fostered by the thought of constructing only to meet minimum regulations.

"Materials normally good under certain conditions were often used in places unsuited to their nature, or the purpose which they intended to serve was nullified on account of poor workmanship, or other inferior materials accompanying them, or because of improper installation.

"Buildings reasonably well designed and efficiently constructed according to good architectural and engineering standards sustained minimum, if any, damage. If all the buildings in the area had been correspondingly designed and constructed, this fact would have probably forestalled the loss of lives."

Government Pays for Biggest Share of Education Costs

That education in the United States is considered a public responsibility is shown by the fact that 78 per cent of the total income for public and private, elementary, secondary and higher education in the year 1929-30 was received from governmental sources, according to the U. S. Office of Education.

The portions contributed were as follows: federal government, 0.8 per cent; states, 16.9 per cent; counties, 6.9 per cent, and local city and school district governments, 54 per cent. The publicly supported institutions received 82 per cent of the total income for all educational institutions excluding the private vocational and business schools.

The Superintendent Needs Help in Promoting Mental Hygiene

It is more important to carry a child through the schools well balanced mentally than to teach him any amount of academic knowledge. An expert psychiatrist can help the superintendent accomplish this

By FREDERICK L. PATRY, M.D., Neuropsychiatrist, University of the State of New York, State Education Department, Albany

SCHOOL men and women of today are to be congratulated upon their open-mindedness, their breadth of vision and their willingness to face facts squarely and to avail themselves of help from every source in order that they may render richer service to their charges and fellow men.

What is the common ground on which the educator and the psychiatrist stand? What are their common interests and objectives?

Both are vitally concerned in rendering better service to children and to the community in the matter of promoting their health, happiness and efficiency. Both are aware of the tremendous importance of the early recognition of individual differences in all levels of biologic integration—physical, intellectual, emotional, temperamental and social. The educator and the psychiatrist are aware that no two individuals are created equal, yet a benevolent democracy has placed upon the schools the responsibility of giving practically all children equal opportunities for education. Both know that they are faced with the problem of how best to deal with one-talent, five-talent and ten-talent individuals. But, in truth, the task is not simple.

Children Need Individual Treatment

The facts of individual differences in original endowment and in trainable material show that there are many and varied assets and liabilities to be balanced; that differences, potential as well as manifest, present overlaps and gradual shading through integration into the more or less sharply defined types of psychobiologic functioning. This means that in order to be most effective the study and educational treatment of children must be individualized. It should be recognized that each individual should be respected for what he is and what he potentially possesses for constructive social con-

tribution. In order that the machinery of modern civilization may move efficiently, the educator and psychiatrist must appreciate the fact that this world has a place for all types of people. It is their opportunity and responsibility to recognize as early as possible variations in general and specific abilities, interests, aptitudes and desires as well as a large array of possible helps to better functioning. They must ascertain what individuals are not made for as well as what they can do with comfort, adeptness and a reasonable amount of satisfaction. It is their job to see that each individual is given ample advantages under intelligent direction for the maximum unfolding, development and training of his own peculiar assets and contributions to the social weal.

What Constitutes Health?

It is on this common ground that the educator and psychiatrist join hands in sharing, by virtue of their own specific training, experience and perspective, the problems that these plastic "experiments of nature" present. The objective of these two groups is not only adequately to prepare children for the business of living happily, harmoniously and constructively with their fellows, but to have each child actually experience comfort, success and joy in his everyday living throughout school life. By so doing there will be no gaps between school life and extramural life; there will be fewer dregs and liabilities clogging the adult levels of socialization.

Professor Fretwell of Columbia University in addressing teachers at Albany, N. Y., made a significant statement. It was to the effect that an evolution is taking place in education in which efforts are being focused on the education of the emotions rather than the development of the intellect. He pointed out that people primarily live by feeling and emotions rather than by reasoning

or ethical suasion. The intelligence was figuratively described as "a speck in a sea of feeling."

Phylogenetically considered, human emotions are of ancient origin in contrast to the recently acquired intellect which largely functions as the "cat's paws," the abject slave of the more fundamental emotional drives. It is to this "speck" that educators have largely devoted their time and training. They are now beginning to realize with Dr. Henry Devine who, writing in a recent number of the *British Medical Journal*, states that intellect is more or less of a luxury, and high intelligence is of less importance than a stout heart—a vigorous, well balanced and harmonious effective life which is the very spring of action. Perhaps another twenty-five years will see educators espousing the training of emotional life, temperament and the better integration of personality factors to at least an equal degree to the now overworshipped intellect. This is one of the aspects of education in which the psychiatrist can be of assistance.

There is a conception of health that I should like to see understood and cultivated by teachers. Health to the average person conveys the meaning of "vim, vigor and vitality." The type of health that mental hygiene espouses includes the common conception of physical well-being since physical and mental cannot be separated; but it goes further. To quote Dr. Lewellys Barker, emeritus professor of medicine, Johns Hopkins University: "Human beings may be regarded as healthy when their reactions respond to their biologic needs, when their powers of adaptation are congruous with the situations in which they find themselves, when their behavior represents adequate responses to environmental stimuli, when their functional performance and endurance are equal to the opportunities afforded and the demands made upon them in the business of living."

Classroom Teacher Needs Assistance

The psychiatrist can assist the teacher in bringing about such a desirable state of health in most pupils. Although he is tremendously concerned in formulating a melioristic mental hygiene program for all the pupils, he is primarily obligated to sensitize teachers to the early recognition of personality difficulties and various types of maladjustment and how they might best be interpreted, prevented and corrected. The bulk of these cases will have to be handled by the classroom teacher. She should be sensitized to recognize her limitations and where to seek assistance for the more seriously involved cases that require more time and training for their interpretation and management than the average classroom teacher can give.

I have much respect for a veteran school super-

intendent whom I recently visited. When inquiry was made concerning classes for the physically and mentally handicapped he seemed somewhat impatient with the large strides special education had taken with its concomitant executive responsibilities in the past ten years. "Yes," he said, "we have special classes for this, that and the other thing, but what I should like to see is a return to the actual teaching of the three R's." Asked about his opinion of visiting teachers he gave the impression that the attendance officer took care of this work. What pleased him was to see practiced the custom of the old time truant officer who took the erring one by the scuff of the neck and dragged him into school. He failed to appreciate the modern desideratum of interpreting behavior rather than judging it.

Teachers Must Know the Pupils

It is questionable whether time should be spent attempting to persuade such a person who is not only nonplastic but also astigmatic, certainly myopic, or both, as to the value and advantages of progressive educational practices. There are abundant illustrations of schools which have proved the case of the indispensable service offered by special education of all kinds. The chief question is "Can we afford such service?" During a period of retrenchment it would be ill-advised to shout from the house tops for larger budgets, even though figures are available showing how dollars and cents can be eventually saved in preventing misfits and salvaging potential assets. Nevertheless, of all the phases of special education, I know of none that is more needed or will bring larger returns than the service offered by the psychiatric social service worker, commonly known in school work as the visiting teacher. It is she who, by training in theory and practice, can gain indispensable sympathetic and intelligent cooperation from home and school. She interprets the various difficulties of adjustment and unwholesome reactions of the child to the school and home, and makes practical recommendations for readjustment and follow-up work. Just as the school physician is now considered an essential part of the school personnel, so should be the visiting teacher who guards the mental health aspects of the pupils. The more complex cases she refers to the family physician, the traveling or local child guidance clinic or the hospital clinic, where modern diagnostic and therapeutic facilities are available.

I need not elaborate on the great variety of deviations from the normal shown by pupils who would profit by psychiatric study and treatment, or upon the many causes thereof. Suffice it to say that no cut and dried prescription can be given. Each should

be approached individually from a fourfold angle—the physical, the environmental, the psychologic and the psychiatric. These minimum facts are essential to the proper understanding and management of maladjusted individuals.

It is not my intention to create the impression that schools should stop teaching traditional academic subjects. They will always be needed to a greater or less extent, depending on the capacity, needs and interests of the individual pupil. But I should like to see emphasized in the schools of tomorrow the teaching of pupils rather than the teaching of subjects. This means that teachers must know the pupils, and to know the pupils teachers must know the pupils' parents and their home and neighborhood settings. Moreover, any house cleaning to be done must begin with the teachers themselves. Pupils cannot be expected to be better poised emotionally or more socially self-possessed and efficient than are the adults in their homes and in the school. What each pupil needs more than anything else is a friend, someone to sympathize with and encourage him, someone who will wisely praise rather than reprimand him, who will not employ sarcasm or so-called disciplinary measures. At least 90 per cent of the disciplinary problems would be nonexistent if the school's resources were adequately fitted to the individual pupil's abilities, interests and opportunities. Pestalozzi said "The essential principle of education is not teaching; it is love."

Pupils Must Be Happy in School

A recent magazine article reported the statement of a girl who attended school in the 'sixties, to the effect that there were only three occasions when she really enjoyed being in school: once when the ceiling fell on the pupils' heads, once when the stove pipe caught on fire and once when a classmate had an epileptic fit. This illustration of the lack of happiness in this pupil's life is an indictment of the pedagogic methods of the time. I should like to repeat, that the schools of today and tomorrow must give outlets to each child's emotional life. Educators and psychiatrists must obligate themselves not only to keep children well but also to make them happy.

Fletcher Harper Swift, professor of education, University of California, gives his seasoned opinion on this aspect of education in the November, 1931, number of *The NATION'S SCHOOLS*: "Today, throughout the world, teachers are thoroughly concerned that the most important basis for a useful and happy adult life is a happy childhood. It is more important that children should be happy in school than that they should acquire any amount of information. A school is essentially an institu-

tion to help children grow, and this growth includes social, physical and spiritual as well as intellectual growth. Without freedom and happiness growth is impossible." Psychiatric opinion would condone such a common sense espousal of attention to the child's emotional life and, I may add, that of the teacher.

I wish to relay a statement made to me in a recent personal communication by a progressive educator, John O. Chewning, superintendent of schools, Evansville, Ind.: "In my opinion, not many years will pass before all instruction in the public schools will be based on the principles of mental hygiene."

Finally, I should like to quote from "The Normal Mind," by William H. Burnham, professor of pedagogy and school hygiene, Clark University: "The hope of the world lies more in mental hygiene than it does in the various forms of conventional education itself."

Some Facts on the School Crisis

The following interesting facts concerning the present situation in the public schools have been announced by the U. S. Office of Education:

There are 384,000 more pupils in elementary and high schools this year than last. There are 14,000 fewer teachers employed.

There is a \$112,800,000 estimated reduction in current expenditures.

It is estimated that \$108,000,000 less was spent on school buildings.

Teachers' salaries have been slashed as much as 28 per cent in one state and 50 per cent in whole counties.

City school budgets are 6.75 per cent below last year. Rural school budgets are 5.23 per cent below last year.

Capital outlay budgets, including such items as new grounds, buildings and equipment, have been slashed more than 40 per cent.

Voluntary return of a percentage of teachers' salaries to school boards has become a common practice.

The cost per pupil in cities from 10,000 to 100,000 population is 9 per cent less than it was in 1929-30.

The cost per pupil in cities from 2,500 to 10,000 population has been reduced 7 per cent in two years. Further reductions have taken place this school year.

The daily cost per pupil in school has decreased 14.1 cents, nearly one-fourth, since 1929-30. The per pupil cost is now only about 48.7 cents per day. In 1929 it was 62.8 cents.

Why Not Change the High School Commencement Program?

It isn't really necessary to go on forever in the same old way, this high school decided, and launched a novel type of graduation exercise

By V. W. BARNES, Principal, Jackson High School, Jackson, Ohio

THE commencement exercise of the American high school is largely traditional in mold and matter. It has come to us from the college ready-made, and has remained, for the most part, throughout a century of educational progress, untouched by school authorities.

We have believed its every part essential, nor dared to add, detract or vary it lest we should impair its functioning. But does it really function? True, it honors the graduates, a few of them, and gives the parents of the remainder an opportunity to see their sons and daughters "all dressed up with nothing to do." It entertains, thrills and some-

times bores us with the out-of-town orchestra, the speaker from the university, the candidate for congress. It provides a specialized service at the expense of the pupil and overlooks the rare opportunities the occasion offers for constructive school publicity.

In our zeal and our blindness we employ others to do what might more fittingly be done by those whom we choose to honor. Usually but two or three of the graduates "earn" places on their own commencement program, and each of these importunes teachers, lawyers and ministers to help him phrase in masterful rhetoric the sublime



"Enough, if something from our hands may serve the future hour." A scene from a school commencement program.

thoughts of his "oration"; or perhaps he merely appropriates the "effort" of an alumnus of two years past and, embellishing it here and there with turgid metaphor and poetic lore, makes it serve again.

But the pupil is not to be censured; his experience and training have not fitted him to cope with the unsettled questions of the ages, and he does his best with subjects beyond his ken. The truth is, the traditional commencement with its formalism of content and procedure is little short of a ceremonial, a sacred rite, neither representative of our most democratic institution nor a true reflection of its spirit. That we are at last awakening to this fact is evidenced by some scattered attempts at change.

An Oral Handbook for the Community

Three years ago, Blanche Sargent, dean of girls and director of activities in the high school at Jackson, Ohio, and myself agreed to launch a novel type of graduation exercise, not differing greatly in form from the usual but wholly new and vital in content. We were convinced that there were potentialities in the commencement program yet unused, and that by making it a purposeful rather than a formal exercise, we could enhance its value both to the school and the community. Aware that patrons, generally, have far less knowledge of the inner workings of their local high school and the complexity of its organization than their interest in it would warrant, and feeling it an administrative duty to keep them informed, we planned to make of the next commencement a sort of oral handbook for the community. Accordingly, we adopted "Jackson High School" as the theme for the spring exercises. The main body of the program, excepting musical numbers, is reproduced herewith.

Our Aims (salutatory) . . . *John Stevenson*
 Our Teachers *Kathryn Roderick*
 Our Student Body *Milford Davis*
 Our Program of Studies . . *Helen Summers*
 Our Marking System *Eloise Wittman*
 Our Clubs *Helen Jones*
 Our Athletics *David Howell*
 Our Publications *Jean Wood*
 Our Music *Mary Hess*
 Our Dramatics *Laura Hank*
 Our Mortality *Helen Grimes*
 Our Needs *Edward Lillico*
 Plan for Meeting Needs

(valedictory) . . . *Ada Merle Stephenson*

In making the assignment of topics, we were guided largely by the factor of pupil interest. The editor of the school newspaper was asked to discuss "Our Publications"; a girl who had won local

recognition as a reader was assigned "Our Dramatics", and a popular and socially inclined lad was given "Our Student Body." The entire class was delighted to have a program that was different. The speakers attacked their several problems with avidity. Faculty members and administrators were besieged, not for ideas, but for information. The pupils had more ideas than they could well confine to the five minutes allotted them. During the closing weeks of school they discussed the "cardinal objectives," observed teachers and inquired into their qualifications and experience, went through office records, analyzed bulletins and courses of study and, on the night of graduation, appeared calmly on the platform and talked to a thousand people on topics about which they were better informed than was anyone in the audience.

Much pleased with the success of this venture, we selected as the theme for the following year, "Studies serve us for delight, for ornament and for ability." Early in the spring, the principal called a meeting of department heads, announced the theme chosen, and explained that the program would consist of a series of demonstrations of the work of the several departments. "Plan some activity," he told them, "which will illustrate well the character of the work you are doing, use as many seniors as you wish and report to the dean or myself one week from today. The time limit on each number is ten minutes." Their splendid co-operation, the valuable suggestions of the director of activities, and the enthusiasm of the pupils, combined to produce the following program, so designed that the audience would not anticipate the nature of the performances:

"Dreams, books, are each a world; and
 books we know,
 Are a substantial world, both pure and
 good."

*Henry Brookins, Eleanor Damron,
 Evalena Riegel, Laveta Arthur*
 Life's Measurements *Robert Ervin*
 "The way to a man's heart—"

*Pearl Davis, Dorothy Freeland,
 Bonnie Jenkins, Virginia Long,
 Winnie Phillips, Marcella Ridge*

"Enough, if something from our hands
 May serve the future hour."
*Jack Jarrell, Herbert Greene,
 Lawrence Martin*

Our Business World
*Doris Rice, Genevieve Branscom,
 Ralph Dearing, Dorothy Branscomb,
 Mamie Michael, Phillip Sprow*

The Lure of the Classics *Adele Stroth*
 "They say miracles are past."
Quentin Spann, Paul Horton

In order to give the reader a clear understanding of the above as presented it will be necessary to go somewhat into detail. The first exercise was prepared by representatives of the departments of English and social science and was presented in dialogue. It consisted of pertinent comments on the contributions made to modern culture and enjoyment by the great writers in English and American literature, history and sociology.

The second speaker had prepared a series of charts and drawings mounted on an easel which he used to illustrate his discussion of the relation

in the construction of a spinet desk were exceptionally well illustrated. One boy explained the separate processes while the other two demonstrated with actual materials in the order taken up by the speaker. The desk used had been built by one of the boys in the school workshop but the separate units had not been glued. The completed project was presented to the audience as a fitting climax.

The next number illustrative of the work of the commercial department, showed an office set-up. The business executive entered, sat down at his



"Our Business World." Jackson High School commencement number illustrating the work of the commercial department.

of mathematics to the industry and business of the world. He called attention to the part played by mathematical science in ancient and modern architecture and feats of engineering. The excellence of this number is attested by the fact that this young man was invited to repeat his performance before the Rotary Club of the city a few weeks later.

For the third exercise, six young ladies who had completed the home economics courses, demonstrated to the audience the correct method of setting a table and serving a three-course dinner. All the necessary linen, china, silver and glassware were used but no food. One girl lectured, two served as waitresses and three as guests.

In the fourth number, the essential operations

desk, looked over his mail, called his stenographer, and dictated a letter which she took in shorthand, read for his approval, typed, sealed and placed in the tray for outgoing mail. He then left for lunch and she followed soon after, taking the letter with her. A second part of this demonstration was a speed test such as is given in the regular type-writing classes. Five pupils participated. The papers were checked and the results announced and compared with the state standards for two years' work. As the record of each pupil was almost double the requirements, the impression made was most favorable.

The sixth speaker told of the importance of Latin and Greek and traced their influence on the literature and language of the present. She illus-

trated her discussion with a number of placards showing the derivation of certain English words and phrases and other interesting facts about our language growth.

The last exercise took up the case for science. While one boy spoke about the contributions of science to modern life, the other placed some simple apparatus and a few chemicals on a table. Together they performed a few practical but showy experiments designed to delight and surprise the audience.

The entire program as outlined was presented without a hitch. Pupils and teachers had worked in perfect harmony in the preparation. There was no artificiality. Teachers were glad of the opportunity to present the work of their separate departments, and pupils were willing agents. The dramatic element appealed to both.

Last Year's Program

In keeping with a nationwide movement, we selected "The Washington Bicentennial" as the commencement theme last year. We followed the plan of the two years previous, a shortened term preventing our using a pageant as a further departure from the accepted form. While perhaps not so far-reaching as a publicity medium as the other two, it was timely and brought our work in American history to the fore. The program in part is given here.

Salutatory *Olive Hartman*
George Washington,

Business Man..... *Florence McClain*
George Washington,

Farmer..... *Starless Dearing*
George Washington,

Soldier-Commander... *William Messing*
George Washington,

the Man..... *Ernstine Hamilton*
Father of His Country, chorus.....

..... *Twenty-One Seniors*
Shall Political Units Be

Changed?..... *Virginia White*
Education for Patriotism.....

..... *Gwendolyn Knox*
Impossible Is Un-American,

valedictory..... *Blanche Jones*

All three of these commencement programs possessed several points in common. There was no outside talent. A chorus composed of senior members of the two glee clubs was a feature of each, taking the place, as it had for a number of years, of the hired speaker. There were individual musical numbers, both vocal and instrumental. Pupil performances were, without exception, excellent and notable for their freshness and originality. From one-third to one-half of the graduates

in classes averaging more than seventy, actually participated in the exercises. Neither the audience nor the pupils were bored with the programs. The pupils' eagerness in preparation of assignments was matched only by their confidence. The principal announced senior honors, awarded scholarships and called attention to notable scholastic achievements of individual members and of the class as a whole. The superintendent assisted by the dean of girls or some faculty member presented diplomas. A time limit was set on all programs to avoid undue length and consequent loss of efficiency.

Judging from the favorable comments received from many quarters, the reaction of parents and pupils, the opportunity given the director of activities for the development of her ideas, and the splendid cooperation of the faculty, to whom much credit is due for the success of the enterprise, the results achieved have well repaid the slight additional effort and time expended in the preparation. The movement seems worthy of development. Its potentialities have been but tapped; its possibilities barely discovered. Even with this meager beginning, we feel that we have attained at least five objectives that we consider necessary and desirable in the commencement exercise of the high school, namely, it should grow out of the pupils' school experience; it should be informative; it should be inspiring; it should establish proper public relations, and it should honor graduates by increasing the number of opportunities for pupil participation.

The School Law Year Book

The first year book of "School Law" has been published by Dr. M. M. Chambers, Ohio State University, who is also editor of *Educational Law and Administration*, a quarterly devoted to the purpose of bringing current legal tendencies before school administrators.

In the preparation of the initial volume, Doctor Chambers was assisted by a committee of thirteen, including Dr. Frank E. Horack, University of Iowa; Harry R. Trusler, dean, University of Florida; M. R. Keyworth, superintendent of schools, Hamtramck, Mich.; Wilford L. Coffey, dean, College of the City of Detroit, and Prof. J. Harry Schad, University of Maryland. The new year book was written to fill a need for a more popular presentation of legal tendencies and decisions than is found in the ordinary specialized and technical reports. Much of the value of this work will rest in its continuity. Every superintendent should supply himself with a copy of this work.

Missouri Gives Its Schools and Taxpayers a New Deal

Recent school legislation in the state falls far short of the goal set by progressive school men throughout the country but it represents a long step toward that goal

By T. E. VAUGHAN, Assistant Secretary, Missouri State Teachers Association, Columbia, Mo.

CIRCUMSTANCES combined to render 1931 a year by no means propitious for progressive school legislation. Nevertheless, the general assembly of Missouri that year passed an act that leading school men of the state have pronounced the most significant piece of school legislation placed on the statute books of the state in half a century. The significance of the law lies in the fact that it gives full recognition to the principle of state responsibility for equalizing, up to a minimum standard, both the educational opportunities of the youth of the state and the burden of school support imposed on property in the local communities.

The passage of this act marks a somewhat tardy assumption by the general assembly of the responsibility assigned to it by the constitution of the state more than half a century ago. That document, ratified in 1875, declares that "A general diffusion of knowledge and intelligence being essential to the preservation of the rights and liberties of the people, the general assembly shall establish and maintain free public schools for the gratuitous instruction of all persons in the state between the ages of six and twenty years"¹; also that, "In case the public school fund now provided and set apart by law for the support of free public schools shall be insufficient to sustain a free school at least four months in every year in each school district in the state, the general assembly may provide for such deficiency in accordance with section eleven of the article on revenue and taxation, but in no case shall there be set apart less than 25 per cent of the state revenue, exclusive of interest and sinking fund, to be applied annually to the support of the public schools."²

The pertinent portion of section eleven of the article on revenue and taxation reads as follows: "For school purposes in districts composed of cities which have one hundred thousand inhabitants or more, the annual rate on property shall not exceed

sixty cents on the hundred dollars valuation, and in other districts forty cents on the hundred dollars valuation: Provided, the aforesaid annual rates for school purposes may be increased in districts formed of cities and towns to an amount not to exceed one dollar on the hundred dollars valuation and in other districts to an amount not to exceed sixty-five cents on the hundred dollars valuation, on the condition that a majority of the voters who are taxpayers, voting at an election held to decide the question, vote for said increase."³

Conditions Were Bad Prior to 1931

For a number of years prior to 1931 the general assembly had been appropriating one-third of the general revenue of the state, along with the interest on the permanent school fund, for the support of public schools. Nevertheless, the amount of money thus provided was so small in comparison with the total cost of public schools that the funds for school support came chiefly from local property taxes, while the unequal distribution of wealth and population caused great inequalities among districts in both school tax rates and educational opportunities offered. Tax rates for school maintenance varied from a few cents to more than a dollar on the hundred dollars valuation, and school terms varied in length from less than four months to ten months. For the school year 1929-30, there were more than a thousand districts in the state in which the school term was less than eight months, despite the fact that the laws of the state required that school be maintained for at least eight months in every district where the maximum tax rate that could be levied without referendum, together with the public funds received, would maintain such a term.

Conditions as regards both school tax rates and educational opportunities had been drifting from bad to worse for a number of years prior to 1931. Recognizing this fact, the educational forces of the

state, under the leadership of the state department of education and the state teachers' association, began almost twenty years ago to seek a remedy for the situation. Their efforts brought about the enactment of a number of salutary laws, most of which offered special state aid for specific purposes; but special aid laws could not remedy an evil that was general in its effect. Consequently, a fundamental change in the basis of school support was sought through the enactment of a law

TABLE I—SCHEDULE FOR DETERMINING ELEMENTARY TEACHING UNITS UNDER MISSOURI'S NEW SCHOOL LAW

Average Daily Attendance	Teaching Units
Not more than 30	1
More than 30 and not more than 60	2
More than 60 and not more than 90	3
More than 90 and not more than 120	4
More than 120 and not more than 150	5
More than 150 and not more than 180	6
More than 180 and not more than 210	7
More than 210 and not more than 240	8
More than 240, one for each 42 or major fraction thereof.	

that would make the county rather than the district the unit for school support. Such a law would have an equalizing effect, since it would bring aid from the stronger to the weaker districts of a county. After a long and hard struggle a county unit law was passed in 1921, only to be nullified the next year by an adverse referendum vote.

This defeat gave a temporary setback to the reform movement, but the leaders went to work at once to pave the way for another campaign. The first move was for a survey of educational conditions in the state. Through the combined efforts of the state department of education, the state teachers' association, the state institutions of higher learning, and the public school officials, the survey was completed, and the findings were published.⁴ Since the people had registered their opposition to the county unit, another remedy was sought. In 1929, the advocates of reform came forward with a well planned legislative program calling for increased state support of public schools, as a means of lessening the burden of local taxation and equalizing to some extent educational opportunities in the various communities.⁵

Interest on the part of the people and the general assembly might have brought favorable results at that time, had the governor been sympathetic. He insisted, however, on a new survey of the situation, before any action should be taken by the lawmakers. He contended that there were other state needs possibly more pressing than the need for a reform of the educational system. He referred especially to conditions existing in the state penal and eleemosynary institutions. His view finally prevailed and a survey commission was provided for by law.

The commission, when constituted, employed Dr. George D. Strayer and Dr. N. L. Engelhardt to direct the survey of the educational system of the state. With the aid of a group of specialists in the field of education, which included Dr. Carter Alexander and Dr. Paul R. Mort, they made an exhaustive study of the public school system and the other educational institutions of the state, and presented a report to the survey commission.⁶ Along with the report went the recommendation that the state assume responsibility for equalizing, up to a minimum standard, both the educational opportunities offered the youth of the state and the burden of school support resting on property in the local communities. The plan proposed for accomplishing this result was essentially the one previously adopted by New York State, which involves a basic local school tax rate and a minimum guarantee of funds to a district on the basis of teaching units derived from average daily school attendance. The basic tax rate recommended was twenty cents on the hundred dollars valuation, and the initial minimum guarantee of funds suggested was \$900 per elementary teaching unit and \$1,200 per high school teaching unit. These guarantees were to be stepped up periodically until they reached \$1,500 per elementary teaching unit and \$2,000 per high school teaching unit.

After careful consideration, the survey commission, headed by Theodore Gary, a prominent capitalist of Kansas City, and embracing in its personnel two members of the house of representatives, two senators and two other prominent citizens, accepted the recommendation, with one important modification. This modification provided for a series of step-ups in the basic tax rate, paralleling the proposed increases in teaching unit guarantees, until when the \$1,500 and \$2,000 guarantees were reached the basic tax rate would be thirty-five cents on the hundred dollars valuation.

A Publicity Campaign Was Waged

Other recommendations made by the educational experts and approved by the survey commission provided for a system of enlarged school districts; an elective county board of education in each county, with power to appoint the county superintendent of schools, and a state board of education, appointed by the governor, and having power to select a state commissioner of education to replace the state superintendent of schools, who is now elected by popular vote.

Soon after the survey commission handed its report to the governor, the state press association held a meeting in Jefferson City and arranged for a publicity committee to wage a campaign of popular education in connection with the program rec-

commended. This program involved a general rehabilitation of the state penal and eleemosynary institutions as well as the overhauling of the public school system. In the campaign for popular support of the program, however, special emphasis was placed on the plan proposed for financing public schools.

Through the efforts of this committee, the state superintendent of schools, and various other organizations and individuals, a majority of both the lawmakers and their constituents, outside the larger cities, were converted to the idea of increased state support of public schools as a means of lightening the tax burden on property in local school districts, before the general assembly convened. The governor, however, was hostile to this phase of the program, but heartily in favor of the plan proposed for the improvement of housing conditions at the state penal and eleemosynary institutions. The chambers of commerce of St. Louis, Kansas City and several smaller communities were openly opposed to the increase in the state income tax rates proposed as one means of raising the additional revenue required to finance the program.

Some Provisions of the New Bill

In his message to the general assembly, the governor practically ignored the recommendations of the survey commission relative to the public school system. He came forward, however, with a recommendation of his own, which was confined to rural schools. He suggested the enactment of a law that would guarantee to a rural district enough money to maintain an eight-months term of school, when the district had levied for school purposes the maximum constitutional tax of sixty-five cents on the hundred dollars valuation. He suggested also that housing conditions be improved at the state penal and eleemosynary institutions. As a means of raising the revenue necessary for carrying out his program, the governor recommended that the state income tax rate of 1 per cent be doubled.

Few members of the general assembly were favorably impressed by the governor's plan. Consequently, the leaders of both houses hastened to prepare and introduce bills designed to carry out the recommendations of the survey commission. Since the amount of revenue available would be the determining factor for the entire program, the bills dealing with taxation were given first consideration. The principal measure in this class was one that sought to modify the income tax law by substituting for the flat rate of 1 per cent then in force a series of graduated normal and surtax rates.

This measure was easily pushed through the house of representatives, but it met with strong

and determined opposition in the senate. In that body, the influence of the members from the two largest cities was great enough for a time to endanger the passage of the act, and finally to force a compromise on rates.

Since no other tax measure was passed, it became necessary to frame the school bill so that less money would be required to finance it than was recommended by the survey commission. Consequently, the teaching unit guarantees were reduced to a point considerably below what the survey commission recommended. In the bill as passed, the basic school tax rate was left at twenty cents on the hundred dollars valuation, but the initial teaching unit guarantees were made \$750 per elementary teaching unit and \$1,000 per high school teaching unit, with the provision that when enough funds were available these should be stepped up to \$900 and \$1,200 respectively.⁷

Elementary teaching units are determined on the basis of the average daily attendance in grades one to eight inclusive, and high school teaching units on the basis of the average daily attendance in grades nine to twelve inclusive. The schedules in accordance with which both are determined are given in Tables I and II. In applying the schedules, schools maintained for white children and those maintained for Negro children are to be regarded as separate units.

The bill provides also for the payment jointly by the state and the local district of the high school tuition of pupils who reside in districts which do not provide the grade of high school work for

TABLE II—SCHEDULE FOR DETERMINING HIGH SCHOOL TEACHING UNITS UNDER MISSOURI'S NEW SCHOOL LAW

<i>Average Daily Attendance</i>	<i>Teaching Units</i>
Not less than 5 nor more than 21	1
More than 21 and not more than 40	2
More than 40 and not more than 65	3
More than 65 and not more than 90	4
More than 90 and not more than 115	5
More than 115 and not more than 140	6
More than 140 and not more than 165	7
More than 165, one for each 24 or major fraction thereof.	

which they are prepared; the addition to the teaching unit guarantees of transportation costs up to three dollars per month for each pupil transported two miles or more in districts which transport all or part of their pupils to one or more central schools, and the payment of \$1,000 by the state to an enlarged district for each building abandoned as a result of the erection of a new building, in accordance with plans approved by the state superintendent of schools. In the payment of high school tuition, the state contributes fifty dollars per pupil, and the remainder of the charge is an obligation to be met by the district of the pupil's residence;

but the total charge cannot exceed the cost to the district making it.

For the purpose of apportioning state school funds, the new law recognizes two classes of districts, (1) those that qualify for equalization aid, and (2) those that do not qualify for such aid. Wealth per pupil in average daily attendance is the factor that determines the class to which a district belongs. In a district that has a relatively large amount of wealth per pupil in average daily attendance, the basic tax rate of twenty cents on the hundred dollars valuation, together with the other aids to which the district is entitled, will produce more than the amount which the district is guaranteed. Such a district will receive from the state fifty dollars for each teacher whose salary is less than \$1,000, one hundred dollars for each teacher whose salary is \$1,000 or more and 1.3 cents for each day of pupil attendance.

Counties and Townships Have Separate Funds

When funds are available for stepping up the teaching unit guarantees to \$900 and \$1,000, respectively, this attendance apportionment will be at the rate of 2.9 cents a day. If such teacher and attendance apportionments, together with the computed yield of a twenty-cent tax and the aids received from county and township sources, would not equal or exceed the sum of \$750 per elementary teaching unit, \$1,000 per high school teaching unit and three dollars per month for each pupil transported two miles or more, then the district receives aid as follows: the sum of \$750 per elementary teaching unit, \$1,000 per high school teaching unit, and three dollars per month for each pupil transported two miles or more, minus the sum of the computed yield of a tax of twenty cents on the hundred dollars valuation and the aids received from county and township sources.

The aids received from county and township sources require some explanation. The several counties and townships of the state have separate permanent school funds. These funds are loaned by county courts, and the income is apportioned to school districts on the basis of school enumeration. For assessment purposes, the property of companies operating public utilities is not assigned to school districts, but to counties. The school tax rate on such property in any county is the average of the rates of the several school districts of the county, and the school taxes collected from such companies are distributed to the school districts of the county on the basis of school enumeration.

Foreign insurance companies doing business in the state pay to the state a tax on all premiums collected. Half of the tax goes into the general revenue fund of the state and half is distributed

to the counties and apportioned by them to the several school districts on the basis of school enumeration. This money, which legally constitutes a free textbook fund, is to be taken into consideration in determining the amount of equalization aid going to a district for the school year 1932-33 only. After that year, it will be left out of consideration in that connection, but will be apportioned to the several districts of the state as additional aid. Districts that do not qualify for equalization aid will receive this money the same as those that do. They will share also in funds coming from county and township sources.

Temporarily, a third class of districts is recognized for apportionment purposes. In this class are the existing consolidated districts that have been qualifying for special consolidation aid. To these districts the state has been guaranteeing \$50 per pupil in average daily attendance if the local tax rate for school purposes was one dollar on the hundred dollars valuation, or, \$40 per pupil in average daily attendance if the local tax rate for school purposes was sixty-five cents on the hundred dollars valuation. Until such time as the teaching unit guarantees become \$900 and \$1,200, these consolidated districts have the privilege of electing to receive aid under either the old or the new plan.

The new law provides also for a redistricting board in each county, to be chosen by a convention of the presidents and clerks of the school districts now existing in the county. The sole duty of this board is to divide the county into proposed enlarged districts. When this duty has been performed, the board is to adjourn *sine die*.

The most recent school legislation in Missouri falls far short of the goal set by progressive school men throughout the country, but it represents a long step in the direction of that goal. It leaves unchanged the time-honored system of state and county school administration. The chief state and county school officers are still elected by popular vote. Little inducement is offered for the abolishment of the one-room school. Nevertheless, the law gives full recognition to the principle of state responsibility for equalizing, up to a minimum standard, the educational opportunities offered the youth of the state and the burden of taxation imposed on property for school support.

References

- ¹Constitution of Missouri, Art. XI, Sec. 1.
- ²Ibid., Art. XI, Sec. 7.
- ³Ibid., Art. X, Sec. 11.
- ⁴Facts Concerning Public Education in Missouri, Supplement to the Seventy-Fifth Report of the Public Schools of the State of Missouri.
- ⁵A Legislative Program for the Public Schools of Missouri, Proposed by the Missouri State Teachers Association.
- ⁶Eightieth Report of the Public Schools of the State of Missouri, Parts 1 and 2.
- ⁷Committee Substitute for Senate Bills Nos. 237, etc., 56th General Assembly of Missouri.

How to Proceed When a New School Superintendent Is Needed

Superintendents in need of a job and boards of education in need of a superintendent will learn here about a plan found successful in filling vacancies in a typical community

By HAROLD J. VAN WESTRIENEN, Board of Education, Royal Oak, Mich.

ONE of the most important activities that must be performed by any board of education is the selection of a superintendent of schools. It is the superintendent who must furnish the necessary leadership to the board of education so that it may properly carry out its other activities of planning, and appraising the work of the schools.

The board of education is responsible for (1) interpreting the educational needs of the community; (2) developing policies that are in harmony with the law and in accordance with the educational needs and wishes of the people; (3) approving means by which the professional agents of the system may make these policies effective; (4) furnishing the financial means with which to provide the physical and educational conditions necessary for organized educational activity; (5) appraising the efficiency of all agents and services rendered, and (6) keeping the people informed as to the purpose, value, conditions and needs of public education within the community. It is unreasonable to expect a board of education, composed ordinarily of laymen, to carry out efficiently these activities without adequate educational leadership. For this reason unusual care must be taken in the selection of a chief executive.

Two Methods of Selection

A board of education may choose between two basic philosophies when faced with the problem of selecting a new superintendent of schools. The most common plan, and no doubt the most subjective, is for the applicant to seek the job, and to sell himself to the board. The successful applicant in this situation is one who possesses a good personality, and is capable of appealing to the emotions of a body of well-meaning public officials who are not informed regarding the real qualifications needed for the position. With the man seeking the job, those responsible for the educational progress

of a community cannot be assured of selecting the man who is best qualified to meet its needs. The other method is for the job to seek the man. This plan is more objective and if adequately carried out it should result in the selection of a superintendent who is qualified to offer the type of educational leadership to which a community is entitled. The latter plan was pursued by the board of education of Royal Oak, Michigan. The technique used and the problems that confronted the committee assigned to the task of recommending a superintendent are described here.

Ten Applicants Given Careful Consideration

Within a short time after the Royal Oak position was declared vacant over one hundred applications from school executives representing twenty-four states in various parts of the country were received. This large group of candidates naturally presented a problem in selection.

It is natural that with such a large number of applicants many would be obviously unfitted for the position. The committee first proceeded to eliminate this group, since it would be unfair to these candidates and would be a waste of the committee's time, to give any more time to their consideration. This first elimination included those holding positions in small schools and those having a limited educational training or experience. By this method approximately sixty of the candidates were dropped, and the number of applicants reduced to a point where more adequate consideration could be given each individual.

The technique for selection from this point on demanded a more careful consideration of the needs of the community and the requirements for the position of superintendent. The local problem was analyzed from the standpoint of population, housing, finances, philosophy of education, instructional methods and supervision and public relations. From the facts revealed in this study the

Board of Education
Royal Oak Public Schools
Royal Oak, Michigan

APPLICATION FORM FOR SUPERINTENDENCY

Dear Mr. _____

Your inquiry regarding the superintendency of the Royal Oak Public Schools has been received.

The Board of Education desire the following information from you as a basis for determining your qualifications for the position. You are requested to reply on this form as indicated, and submit the additional information in any manner in which you may see fit.

A. Degrees and Institution.

A. B. _____ 19____
M. A. _____ 19____
Ph. D. _____ 19____

B. Professional Training COURSES and INSTITUTION

INSTRUCTOR

Administration _____
Child Accounting _____
Finance _____
Methods _____
Personnel Management _____
Philosophy _____
Psychology _____
Public Relations _____
School Law _____
Supervision _____
Educational Research _____

NOTE. A transcript of your credits, direct from the institution, will be necessary for final consideration.

Previous positions held—Title, years, school system.

POSITION	LOCATION	DATES	NO. PUPILS	NO. TEACHERS

committee arranged a job specification for the position to be filled. This specification took into account educational training, administrative experience, professional standing, educational contributions, community relations and the desirability of a personal interview before final selection. The next step was the preparation of an application form by means of which the desired information concerning the candidates could be obtained in a form that would simplify the work of the committee. The application blank shown in this article was the one used for the final selection and it was sent to each of the remaining candidates.

A brief analysis of the forty formal applications revealed ten applicants who were obviously qualified for the position. The other thirty, although possessing good qualifications, did not compare in training or experience with those selected for final consideration. The remaining ten applications were studied in detail. This semifinal selection involved a critical analysis of such factors as philosophy of education, grasp of the problems submitted, professional training and administrative experience. Most of the remaining candidates were interviewed by all members of the board of education and were questioned by the committee.

On account of the rapid upgrading of the pro-

The Royal Oak Public Schools

The following data will serve as a basis for answering the remaining questions.

Royal Oak. A growing suburban residential community of about 22,000 population. It is situated between Detroit and Pontiac, and within 45 minutes of downtown Detroit by street car, bus, or G. T. Railway commuter service.

SCHOOLS NAME	Principals	Clerks	Pupils	Teachers	Miscellaneous Employees
High School	1	2	1260	46	Superintendent with one secretary
Junior High School	1	1	702	23	for child accounting
Oak Ridge Jr. and El.	1	1	522	16	Business Manager and Building
Franklin El.	1	0	407	19	Supt. with one clerk.
Grant El.	1	0	459	12	Grade supervisor of instruction
Longfellow El.	1	0	570	14	without a clerk.
Northwood El.	1	0	536	13	Bookkeeper with clerical help four
Parker El.	1	0	181	6	days per month.
Starr El.	1	0	182	5	Two school nurses for all the
Washington El.	1	0	454	14	schools.
Whitmer El.	1	0	624	14	Two bus drivers and delivery men.
Totals	11	4	5987	174	

NEEDS OF THE SYSTEM

1. Functional and administrative reorganization.
2. Unification of philosophy of education and of instructional methods.
3. Improvement of supervisory technique and financial procedure.
5. Training or adjustment of some of the personnel.
6. Development of a public relations program.

NOTE. Please furnish the following data as your solution to some of the problems that the new superintendent will be expected to solve during the next three to five years.

- D. Present a plan for administrative organization of our system, in diagram form, and indicate the functions of each of the personnel.
- E. State your philosophy of education, and the methods of instruction and supervision that you recommend, and are prepared to direct.
- F. Outline the type of finance procedure that you recommend for a system of our size, and submit some evidence to prove your ability to direct such a procedure.
- G. List some of your major contributions to educational administration and instruction, such as: solutions of problems in your own school, giving nature of problem and type of solution. Addressees; publications; services to any state or national educational association; or the part you have taken in local civic organizations.

- H. List the types of Public Relations services that you are capable of rendering or directing in our community.

- I. Your present or last annual salary \$_____ No. months _____ Salary you will accept if the position is offered to you? \$_____ for 12 months.

- J. Individuals from whom we may request recommendations: _____

- K. Enclose a recent photograph unless already sent.

- L. Will you be able to appear for a personal interview with the Board of Education if the committee considers you qualified for the position? _____

- M. Signature _____ Age _____

Present Position _____

Address _____

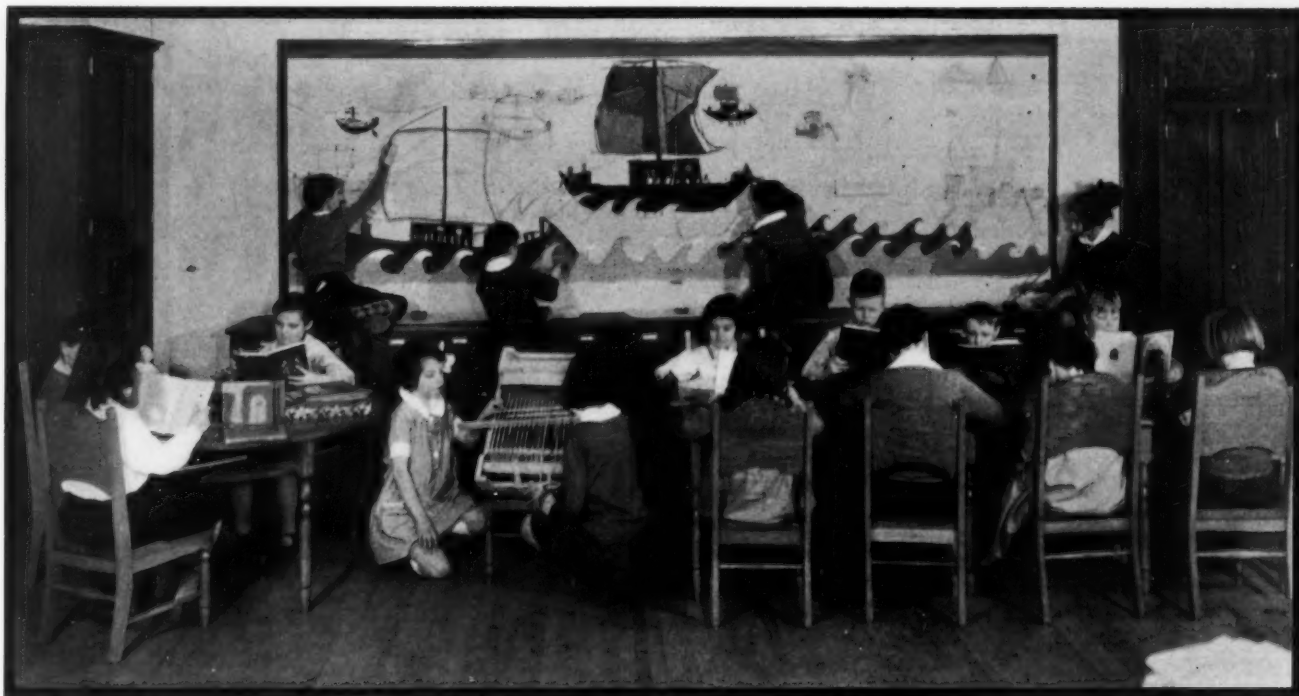
- N. Address all correspondence to Miss Clara Ellen Starr, 3123 Crooks Road, Royal Oak, Mich.,

Committee, CLARA ELLEN STARR: Chairman
ALBERT E. SCHULER
HAROLD J. VAN WESTRIENEN

Date _____

fession during the past five years it was found that there was little to differentiate the candidates from a standpoint of professional training. It was also found that most of the remaining candidates had considerable administrative experience. The principal basis upon which the field was finally narrowed down to three candidates was the grasp of the problems submitted, and the success of the candidates in meeting the various administrative problems in their past positions.

With but three remaining candidates to consider, the work of the committee became much more critical. With all other vital factors satisfied, the remaining points to be considered were, (1) availability of the candidates; (2) personality; (3) general social background, and (4) social fitness for the community. Although salary is always an important factor, the committee was more desirous of finding the best qualified man than of making a small immediate saving that would be all out of proportion to the ultimate economies that the right man would be able to effect. False economy is a mistake in the administration of public education. Because of this and because each of the remaining men could be obtained for the same salary, this factor was not a vital one in the final selection.



Analyzing and Measuring Democracy in the Classroom

The observational method of sampling pupil behavior in actual classroom situations yields reliable and usable data

By J. WAYNE WRIGHTSTONE, Institute of School Experimentation, Teachers College, Columbia University

DEMOCRACY in classroom instruction has been stressed by recent experimental practices in public education. Emphasis has shifted from teacher assigned subject matter to a cooperative quest on the part of both teacher and pupil for suggested activities, methods, and materials in building a curriculum. Since democracy in any situation is based upon individual participation in determining policies and executing group enterprises, an important correlative aspect of democratic action is the determination of policies through a series of group discussions and careful planning.

John Dewey, one of the foremost leaders of educational and social thought, argues that the school, —and hence the classroom—must provide opportunities for democratic living by means of which meaningful experiences, intellectual and otherwise, will emerge. Nicholas Murray Butler, president, Columbia University, deplores the tendency of

many teachers to rely upon formal examinations and tests and to overlook the fact that inadequate emphasis is laid on character building and good manners. These viewpoints are reenforced by the following important conclusion of Hartshorne and May in their *Character Education Inquiry*:

How One School Instills Democratic Principles

"It can hardly be expected that most children can be taught to be responsive to social ideals unsupported by group code and morale. When the individual is made the unit of educational effort, he is so abstracted from life situations as to become more and more of a prig in proportion as his teachers succeed with him and more and more the victim of a disorganized and detached mind in proportion as they fail. The normal unit for character education is the group or small community, which provides through cooperative discussion and effort the moral support required for the adventurous dis-

covery and effective use of ideals in the conduct of affairs."¹

Photographs accompanying this article were taken from a school system that is attempting to provide in the classrooms experimental practices in democratic living, creative expression, desirable knowledges, habits and attitudes. Let us take, for example, the Egyptian boat frieze, painted as a group project along with the study of Egypt in social science. Before entering into the study the class met as usual to allow the children to discuss what they already knew about Egypt, its people, its customs, its work and its means of transportation. Questions on different phases of the subject were formulated, so that the pupils, in their reading, would look for definite facts. When the class had advanced well into the study, work on the frieze was started. A comparatively small group painted the agricultural picture depicting the Egyptians at work in their irrigated fields, but the entire class cooperated in making the larger frieze showing pleasure boats, trading vessels and funeral boats, the design of which required a thorough knowledge of this phase of the study. Each pupil showed his boat design to the class for criticism and suggestions. Eleven boats were chosen to be painted on the frieze, which is illustrated on the preceding page.

A Lesson in Perspective

In deciding where each boat should be placed and how large it should be, the children learned about perspective. A boat in the foreground must be painted larger than one of equal size farther away. Which boats would look better in the foreground, which in the background? Who should be in charge of the frieze, who should have charge of different divisions of it, and who should work on each part?

In the example just cited one can discern the

integration and interaction of such activities as cooperative discussion, creative expression, and certain desirable knowledges, habits and attitudes. The particular activity to be described in this article is a method for measuring group discussion and planning. Therefore, a slightly technical account of such an instrument of measurement is extremely desirable.

The Instrument of Measure

Progress in devising new instruments for measuring aspects of the educative process has been slow in recent years. Research workers have been intent upon refining and expanding measuring instruments already devised. Those instruments which have been refined and expanded have been pencil and paper tests of an objective nature, rating scales, case study techniques, questionnaires and performance tests. However, a new instrument for measuring aspects of behavior and conduct, known as the observational method, has been emerging, particularly among research workers in child development institutes.

I was faced with the need for developing an instrument to measure individual participation in cooperative group discussion. The observational method, developed by Olson,¹ Goodenough² and Thomas,³ was studied for a suggested approach. The advantages of this method are that it is a direct method of sampling behavior in actual classroom situations without disturbing the usual activities of the pupils, and the data can be treated by conventional statistical formulas.

Briefly, this method comprises a number of systematic daily observations for limited short periods of time of defined units of behavior of individuals

¹Olson, Willard C., *The Measurement of Nervous Habits in Normal Children*, University of Minnesota Press, Minneapolis, 1929.

²Goodenough, Florence L., *Measuring Behavior Traits by Means of Repeated Short Samples*, *Journal of Juvenile Research*, vol. 12, 1928, p. 320.

³Thomas, Dorothy S., *Some New Techniques for Studying Social Behavior*, Bureau of Publications, Teachers College, Columbia University, New York, 1929.

TABLE I—PERCENTAGE FREQUENCIES FOR ITEMS COMPRISING CODE FOR COOPERATIVE GROUP DISCUSSION

Items of Code 3	Percentage Frequencies According to Schools and Grades								
	School A: Grades							School B: Grades	
	IS	IM	II	III	IV	V	VI	II	VI
3a. Voluntary report	5%	1%	4%	9%	8%	6%	6%	6%	12%
3b. Assigned report	3	0	2	2	10	12	0	1	2
3c. Real experience	7	10	6	12	3	4	8	16	4
3d. Vicarious experience	3	3	3	15	11	12	14	8	16
3e. Question	2	2	8	17	18	5	6	20	7
3f. Criticism	10	8	17	21	18	30	20	14	14
3g. Suggesting means, etc.	70	76	60	24	32	31	46	36	35
TOTAL	100	100	100	100	100	100	100	100	100

¹Hartshorne, H., and May, M. A., *Studies in the Organization of Character*, The Macmillan Company, New York City, 1930, p. 379.



This picture of Egyptian farmers at work was painted by a group of pupils in the schools of Bronxville, N. Y.

or groups. Each defined unit of behavior is represented by a code, and each time such behavior occurs during a period of observation it is recorded in code. The total number of codes which appear for a given individual is regarded as his score. The number and the length of the observational periods should be the same for all individuals, if a direct comparison of scores is desired. Following is the code used for Cooperative Group Planning and Discussion:

Directions for Use—This code is to be used when a class is planning, reporting or discussing units of work, problems or activities. It is not to be used with a question and answer prepared-lesson situation. Code only those pupil contributions that are needed by the group. Disregard extraneous remarks of a pupil. Observe the group for the entire period of discussion. Make an accurate record of the exact number of minutes of the cooperative group planning and discussion. Enter the following codes upon the data sheet for systematic observations as instructed:

Prepared voluntary report or exhibit.....3a

Credit each pupil who participates in the preparation or presentation of a voluntary report or exhibit. Examples are: Pupils who voluntarily and independently, either as individuals or committees, look up information, seek solutions and make an oral or written report to class; or pupils who construct exhibits and

models or secure pictures, books, samples and the like.

Assigned report or exhibit.....3b

If the teacher or the group assigns a report or exhibit, code such reports and exhibits 3b.

Extemporaneous contribution from real

experience.....3c

Contributions to discussion gained from travel, excursions, trips to the museum, factories, city or country.

Extemporaneous contribution from vicarious

experience.....3d

Contributions to discussion gained from independent reading, pictures, movies, lectures and other persons.

Asking question on the topic, unit or problem..3e

Credit a pupil with code 3e each time he asks a question or seeks information from others on the problem or topic.

Criticism of a contribution: praise or

challenge.....3f

Praising or challenging a contribution of some member of the group, including the teacher.

Suggesting means, methods, activities,

solutions.....3g

Credit a pupil 3g each time he makes contributions in suggesting means, methods, activities, solutions, hypotheses, for the problem, project, unit or topic.

In the scoring of pupil responses each contribu-

TABLE II—COMPARABLE UNITS OF AVERAGE PUPIL DISCUSSION IN CLASSES WITH RELIABILITY COEFFICIENTS OF PUPIL SCORES

<i>School and Grade</i>	<i>Pupils in Average Daily Attendance</i>	<i>Minutes of Observation</i>	<i>Average Pupil Score</i>	<i>Comparable Units of Discussion</i>	<i>Reliability Coefficients</i>	<i>P.E.r</i>
SCHOOL A						
I	24	157	8.62	1.31	.89	.028
I	26	138	8.34	1.57	.95	.015
II	24	123	9.29	1.81	.84	.041
III	26	196	10.29	1.36	.90	.025
IV	30	174	7.43	1.28	.81	.044
V	33	190	7.39	1.28	.60	.071
VI	28	210	11.42	1.52	.90	.023
SCHOOL B						
II	16	92	3.04	.53	.70	.076
III	30	180	5.10	.85	.82	.044
VI	21	180	5.76	.68	.94	.015

tion was counted as one point. Hence, for each code that appeared after a pupil's name one point of credit was given. For example, if five codes appeared after a pupil's name for one day, his score would be five; if no codes appeared, his score would be zero. To secure each pupil's total score for all periods of observation, his daily scores were added together. In order to check the accuracy of the scoring, the investigator and his assistant went to the same classroom and observed the same pupil discussion and activity. Each coded the pupil behavior independently. Then the scores were compared for each pupil. The total scores showed a 90 per cent agreement. When individual items were compared, they showed an 88 per cent agreement among the various investigators.

The first approach to the analysis of data for cooperative discussion was to compute the percentage frequencies of the occurrence of the items comprising the code. The similarities and differences among classes, as units, may be presented by this analysis. Trends and tendencies of certain kinds of contributions to increase or decrease as one progresses from the lower to the upper grades may be noted. These data are merely indicative of probable trends because a sufficient number of cases have not been treated to allow for definite conclusions.

Data Reveal Interesting Fluctuations

It is interesting to note in Table I the variation of the percentage of contributions in each class that appeared as voluntary prepared reports (3a). They range from 1 per cent in Grade 1M of School A to 12 per cent in Grade 6 of School B. Few assigned reports appear in the classes. Extemporaneous contributions from real experience (3c) show interesting fluctuations, revealing percen-

tage frequencies averaging about 12 per cent in the primary grades but only about 5 per cent in the intermediate grades—four to six, inclusive. Extemporaneous contributions from vicarious experience (3d), as one might expect, always show a more or less significant increase after Grade 3. The average for the primary grades was approximately 4 per cent and for the intermediate grades about 15 per cent. Asking questions and criticism of contributions (3e and 3f) vary, showing no particular trends according to grades. However, suggesting means, methods, activities, and solutions for problems (3g) is the most frequent single item of the code, particularly in the lower grades where the percentage frequency averages about 65. In the upper grades the average is about 35 per cent.

Computing the Reliability Coefficients

Another approach to the analysis is presented in Table II. In this treatment of the data the number of comparable units of class discussion per minute were computed. To make this computation, the average pupil score for each class was divided by the ratio of the number of minutes of discussion observed to the pupils enrolled. For example, in Grade 1 of School A the average pupil score was 8.62 contributions. The minutes of discussion observed were 157, and the pupils enrolled were 24, making the ratio 6.54 minutes per pupil, while 8.62 contributions divided by 6.54 yields 1.31 units of class discussion per minute.

Perusal of comparable units of average pupil discussion in each class shows that differences are more likely to exist between schools than among classes within a school. While these data are insufficient for any such definite generalization, Schools A and B do show such differences. These

scores are quantitative measures of pupil discussion and other instruments must be used for qualitative measures.

The coefficients of reliability were computed by correlating the score for each pupil for one-half of the period of observation with his score on the other half. The coefficients between the split halves were corrected by the Spearman-Brown formula. The corrected coefficients, as an average, compare favorably with the reliabilities of most pencil and paper achievement tests.

In order to make a factor analysis, the scores for pupil discussion were correlated with mental age, chronological age, socio-economic status (Sims scale), and emotional stability (Woodworth-Mathews Personal Data Sheet). The average correlations were approximately with mental age .26; with chronological age .06; with socio-economic status almost zero, and with emotional stability —.09. These factors apparently are not important in predicting participation in discussion.¹

Know and Meet Your Public

By WARD A. SHOEMAKER

Research Associate, Teachers College, Columbia University

The schools of a certain small city installed cafeterias in order to provide carefully supervised menus for the pupils at noon, and to keep them from downtown loafing places. The pupils were required to secure special permission to go downtown. The proprietors of "hot dog" stands and drug store lunch counters organized a "merchants' association" to oppose the arrangement. The association received the support of a newspaper, employed a lawyer, and took its case to court. Although the schools won the case, the board of education was forced to employ a lawyer and go to much trouble.

This case is one of the many discussed by J. Flint Waller in his recent book "Outside Demands and Pressures on the Public Schools," published by the Bureau of Publications, Teachers College, Columbia University. Mr. Waller, through interviews with 150 school superintendents, gathered tales of grief and woe, many of which would be familiar stories to superintendents. There are politicians who desire patronage or control of finances; groups working to secure tax reduction; job hunters and their backers; "important" individuals who want to run the schools; religious groups for or against religious education in the schools; sales forces after the business of the schools, and finally, the most numerous of all, the

many organizations that desire to work in or through the schools.

But, of course, the public is not always at fault; the demands are often justified. Then, too, school officials are not without sin.

Instead of thinking themselves martyrs, officials should consider demands and pressures as a part of their job in effecting mutual understanding between the schools and the public. Indeed, it is possible for them to take the initiative and do much toward determining the number and kinds of demands. They can reduce the objectionable ones and encourage the useful ones. The following case will illustrate:

Good Judgment and Tact Are Essential

A newly elected council member asked the superintendent to see that the daughter of one of his supporters be given a teaching position. Instead of refusing, the superintendent invited the councilman to come to see him. The superintendent explained the system of selecting teachers according to merit, as judged by examination and record and interview judgments, and gained the politician's respect and approval of merit rather than patronage. The superintendent gained, through tact, not only the councilman's willingness to have the applicant take her place in line, but also his fairness thereafter regarding the school budget and other matters coming before the council.

Although no formula will take the place of good judgment, tact and human understanding, Mr. Waller offers the following suggestions for guiding potential promoters into the most desirable channels:

1. Plan to have the people of the community know the schools.
2. Increase the worth of the services of the schools and thereby have the people more strongly behind them.
3. Give due consideration to the attitudes of important groups in the community.
4. Search out the causes of actual or potential demands.
5. Capitalize the opportunities offered by demands as well as by other contacts.
6. Cooperate with the leaders of the various community groups. One effective and economical means of gaining such cooperation is a "presidents' council."
7. Develop among the principals, teachers, janitors and pupils an appreciation of the importance of public and school relations, and of the potentialities for good or evil with which every contact is fraught. Increased confidence and leadership in community affairs will come with increased participation.

¹Data cited in this article were secured through the cooperation of the schools of Bronxville, N. Y., and Summit, N. J.

Kentucky Tests a Plan to Unify Her Educational Program

Supervisors are at work in a statewide effort to articulate the work of elementary and secondary schools by giving equal consideration to children of all grade levels

By R. E. JAGGERS, State Department of Education, Frankfort, Ky.

TWO points of view regarding the improvement of educational facilities have moved those engaged in administration and supervision of schools. One group has approached the problem from the viewpoint of improving the individual school. To this end standards have been set up for the purpose of rating buildings, equipment, teachers, length of term and organization. An examination of the efforts of supervisory staffs of state and local school units to improve and standardize facilities shows that numerous criteria exist for rating efficiency of individual schools. Standards and score cards are abundant.

State and regional organizations approach the problem of accrediting secondary schools from the standpoint of the individual school. One high school may be approved or accredited and its graduates admitted to colleges without an examination, while another high school in the same administrative unit may be refused admission because it does not meet existing requirements. One may be made up of pupils from an elementary school employing qualified teachers, maintaining adequately equipped buildings and having a standard term of nine months, while another may admit pupils from an elementary school employing teachers whose qualifications are below standards, housed in a poorly equipped, one-room building and having a term of seven months. State associations of colleges and secondary schools, the Southern Association of Colleges and Secondary Schools and the North Central Association of Colleges and Secondary Schools deal with the problem from the angle of the individual school. The entire system of accrediting schools in both rural and urban areas is based on the efficiency of the individual unit. What happens in the secondary school is almost the only factor that gets consideration when criteria are applied to the individual school.

Emerging gradually is another group of persons who doubt the soundness of the present method of

rating the individual school without consideration for all the schools within the administrative unit. They insist upon taking a perpendicular view of the total educational program offered in the administrative unit. The elementary school, the junior high school, the senior high school and even the junior college should constitute an articulated and unified program, with equal consideration given to all levels by those charged with administration and supervision.

A Lack of Coordination

In keeping with the practice of administering the program by the school-to-school method, state departments of education have provided elementary school specialists, secondary specialists and vocational specialists. Each specialist has constructed or adapted measuring instruments and has applied these measures school by school, rejecting a school here and approving a school there. The elementary specialist has dealt exclusively with the elementary school and the secondary specialist with the secondary level, each in a measure unconscious of the problem of the level below or above him. It often happens that the elementary specialist enters a county one week and points out the elementary school needs, while the secondary specialist makes a similar visit the following week in the interest of the secondary schools. Little coordination is evident. The local administrator, often with meager training, is left the task of viewing the entire program and attempting to unify and articulate the system. He attempts to do justice to all levels of the school program in keeping with the recommendations of the various specialists whose views conflict and who often favor a particular level.

States have built their programs of education by levels. The common school was at first the elementary school, but today it is considered as a twelve-grade school. When it was decided to ex-

tend the common school to twelve grades, a new school of four years was built and placed beside or above the eight-year school, rather than made a part of the eight-grade program. More money and better facilities—terms, teachers, equipment and organization—were assigned to the new school. It has separated itself from the first eight grades and vigorous efforts have been made to connect it more closely with the elementary school. True it deals with the pupil when special needs appear and an effort is made to make it meet those needs, but the gap is so wide that 50 per cent of the children, in many instances, are lost between the last year of the elementary school and the first year of the secondary school.

What Is a Unified Program?

One of the causes of this condition is lack of unification. By unification is meant granting to each grade level of the total educational program offered by an administrative unit equal consideration by those who organize and finance the program. It means that elementary school children are given as much consideration as the pupils of the secondary school or any higher grade level offered by the administrative unit.

Translated into more practical terms, a unified program of education means that the school plant for the elementary child will be as well planned and equipped as the plant housing the secondary school; that the quantity but not the quality of training required of the elementary teacher will be equal to that of the secondary teacher; that there will be no discrimination between the elementary and secondary teacher in salary, and that the terms for both elementary and secondary pupils will be equal in length. It may be that the elementary school does not need so adequate a building, so much equipment, a teacher so well trained and paid or a term so long as the secondary school, but in this age of scientific research many people are waiting for proof.

Kentucky's Objective

Articulation between elementary and secondary schools will never come until equal consideration is given to the two levels. To give equal consideration does not mean that the facilities of the secondary school must be lowered to the level of those in the elementary school, but it does mean that a careful study of the needs of each grade level in the educational program should be the basis of planning.

In order that intelligent planning may come, there must be a study of the entire program before judgment is rendered. The specialist in elementary education cannot give intelligent advice to

the local superintendent until he has given attention to the secondary program as well as to other related problems. Neither can the high school specialist give intelligent advice until he has a measurable understanding of the elementary program. In a state program of supervision it would be desirable to have specialists in the various fields of school organization and a division of coordination. This would cost more than most states are willing to pay.

An attempt has been made by the state department of education in Kentucky in recent years to get the local school administrator to work toward a unified school program. Definite standards have been applied to the high school program for many years. Armed with the rulings of the Kentucky College Association, the Southern Association of Colleges and Secondary Schools, special legislation and a friendly public, relatively little opposition was met in making rapid improvement in the secondary school program. Those interested in elementary education have adopted standards for measuring efficiency of elementary schools, but no state organization or southern association sponsored the program. During these years the minimum term for the elementary school has been seven months while the accrediting associations secure a nine-month term for the secondary schools. Wide differences appear in plant equipment and training of teachers.

Equal Consideration for All Grades

Regional conferences of superintendents and principals were called in the fall of 1930 at convenient places in Kentucky to discuss the organization not of the "high school" or of the "elementary school" but of the "twelve-grade school." Before that time annual conferences had been held to discuss only high school problems, and similar conferences had considered only elementary school problems. The 1930 conferences resulted in a declaration of eleven principles concerning the unification of the school program. In substance these principles may be included in a single statement: "Equal consideration should be given to children of all grade levels when planning and administering the educational program in any administrative unit."

Again in the fall of 1931 conferences were called in ten Kentucky cities. Each conference had to do with the organization of the common school—the twelve-grade school. Problems related specifically to the secondary grades were presented by the high school supervisors, while those related to the elementary field were led by the elementary supervisors. Problems related to the entire program were discussed by both elementary and secondary

supervisors. Keen interest was manifest on the part of principals and superintendents in this approach. The principals of twelve-grade schools were made to feel that they were not merely high school principals but principals of twelve-grade schools; that two-thirds of the grades and three-fourths of the pupils were elementary pupils, and that they were leaders of the whole program and responsible for providing adequate learning conditions in all grades.

The Total Program Was Considered

When the time approached for the annual program of high school inspection in 1931, the question of unification arose. It was decided to include both elementary and secondary supervisors in the activities. Instead of visiting and inspecting the high school only, each supervisor was to look at the total program and help the local administrator to take a perpendicular look at the program from the first grade to the twelfth. Each of four supervisors was assigned a group of counties. The supervisor was instructed to go into each county and work for two, three or four days, depending upon the size of the county and facilities for travel. Each secondary school was visited and inspected and a sufficient number of the small elementary schools were visited to enable the supervisor to get a comprehensive view of the elementary school program. Most high schools are part of a twelve-grade school and in such cases the total program was considered in making recommendations. The county superintendent traveled with the supervisor and together they studied the entire county program. In most counties there was one or more independent districts, to which the county board of education sent pupils from adjacent sections of the county district for high school facilities. The county superintendent was therefore to some extent interested in the school programs of these districts.

The Results of the Inspections

After the inspection was completed in a county, the superintendent and the supervisor considered problems to be met and future plans. Practically every phase of the county program was discussed. These problems included merging of small independent districts with the county district; planning of countywide promotion programs; budgeting for instructional supplies; plans for supplementing the state courses of study; training of teachers; teacher placements; planning a high school program; attendance, retardation and elimination; teachers' meetings; visitation and conference; tests and measurements; classification of pupils; organization of twelve grades; county board

problems; county and district surveys; elimination of schools; consolidation and transportation, and libraries.

After his return to the office, the supervisor made a written report to the principal of each high school in the county. A copy of the report of a high school under county board supervision was sent to the superintendent, and a copy of the report of a high school in an independent graded district was sent to the secretary of the district board. A detailed report was sent to the county superintendent giving recommendations concerning needs discovered during the supervisory visit and the follow-up conference.

In visiting a twelve-grade school the attention of the principal and superintendent was called to the needs of each grade. In some cases fifty or sixty children were found in the primary grades under one teacher. In approximately 90 per cent of the elementary classrooms teaching supplies and equipment were inadequate. In the middle and upper elementary grades libraries were lacking. In the secondary grades there was little overcrowding and teaching equipment was relatively more adequate. The report to the principal directed that attention must be given to the needs of all grades under his supervision. Such report served to emphasize the total offering of the school and not a single part of the program.

There Are Many Common Problems

This method of attacking the problem of improvement is an experiment and appears to have merit. Since the principal and the superintendent must face problems met in all the grades, they need to look at the entire program. If a supervisor enters his school and works with the high school only, he leaves the principal with many unsolved problems to face alone. Likewise, if a supervisor goes into a county to work only with the elementary schools, the superintendent must work alone with problems of planning his high school program.

The experiment might be condemned on grounds that a supervisor of elementary education is not competent to advise concerning high school problems, and that the high school supervisor is equally ignorant regarding elementary school problems. It is admitted that each can do more intelligent work if he confines his advice to the field in which he is trained. However, many problems involved in unifying the program are common to both elementary and secondary schools. In the absence of an adequate staff in the state department of education, it is believed that effective service toward unification may be rendered by this method in county district states.

Cost of Teaching Typewriting Can Be Greatly Reduced

Experiments with a simplified keyboard indicate, according to the authors, that typewriting can be taught in half the time now required, thus making present facilities adequate for many more pupils

By WILLIS L. UHL and AUGUST DVORAK, University of Washington

THE training of typists is a huge educational undertaking even in terms of the million employed typists in American business and industry. Typewriting classes in schools, however, are destined to a far greater expansion as personal use of private portable and standard machines forges ahead of the obviously saturated office field. Once considered only a tool of commerce, the typewriter is today an important tool for practically all whose educational and vocational level corresponds to that of the usual high school junior or senior.

Teaching Costs Can Be Cut 50 Per Cent

This is a period when people are given to much communication and literary expression. Yet the cost of necessary desks and adjustable chairs, typewriters, materials, often special rooms, the time required and the specialized teachers, make typewriting one of the more expensive subjects in the high school curriculum. The annual cost of high school typewriting classes is about \$560,000 in the state of Washington alone. For the entire country the cost runs into millions of dollars. Despite this great outlay, most school typing instruction is extremely inefficient. Its high cost can be reduced more than 50 per cent along with marked rises in the efficiency of pupil typists. This should interest school men.

The persistence of handwriting classes in the school curriculum after the general acceptance of modern precision typewriters in all sections of the United States is perhaps one of the curious social lags in our technical civilization. There are, however, certain factors of this lag which only now appear under control. The problem of this control is allied to those outstanding applications of psychology to industrial shops known as motion and time study. The story of machine writing can be traced in increases of savings in both time and motion.

Writing machines were launched with a patent under Queen Anne in 1714, and to write with them proved a slower process than writing with the ubiquitous pen. Over a century later, in 1873, under the inventive hands of Christopher Latham Sholes, a practical machine, writing capital letters, was shaped in his modest shop in Milwaukee. Despite upwardly striking type bars that left the writing "blind," or hidden; despite crude "sewing machine" lines and a foot treadle for returning the carriage, this typewriter became a commercial success in 1886. Mark Twain then called it a "curiosity breeding little joker." Its chief resemblance to the modern typewriter was its keyboard by which the writing was controlled. This curious keyboard was patched together in Sholes' heart-breaking experiments to fit keys into positions without colliding or sticking at the writing point. Although such mechanical difficulties have long since disappeared from the modern typewriter, this patchwork keyboard has scarcely changed. Unfortunately, such a keyboard is not related, except by chance, to the sequences of written English or even to the arrangement of letters in a printer's case.

Timesaving Demonstrated in Experiments

Despite the survival of a haphazard keyboard, typing as a timesaver has become more and more popular. Numerous mechanical improvements have brought forth the modern, front-strike, precision machine with its visible writing. Such advances have culminated in the improved portable typewriter and in the pressure printing of the noiseless machine, with its fast, light, staccato touch. It is true that schools are still prone to use typewriters with a heavy and uneven key resistance. It is true that laboratory tests show the average typewriter mechanically at about three-fifths of its possible efficiency, and that individual machines differ widely and uncomfortably as long

as the schools fail to insist upon a uniform factory adjustment. All these handicaps, however, are needless today. With the opening of the present century, the all-finger touch method of typing with the eyes on the copy first won general acceptance. Increased efficiency of typing teachers has made feasible a shortening of the usual two-year course by one full semester. Timesaving is well demonstrated in the University of Iowa experiments, where fully a third of the first semester time is eliminated by practice upon most common words and use of a steady, rhythmic pace from dictating machines. Timesaving is likewise shown in surprising speed increases when a newly developed flexible, electric timing mechanism sets the stroking rhythm for the class.

The sharing of portable typewriters, during the experiment by Wood and Freeman, among 6,000 children in kindergartens and the first six grades, has added pleasurable incentives to elementary teaching.¹ With ninety to 130 informal typing minutes each week, young children typewrite with the speed of handwriting. This is sheer gain since their handwriting keeps its usual form. With typewriters it seems easier for children to think, to turn out more written work and to do more original writing. The difficulties that handicap these typing interests of young children, says Haefner,²

¹Wood, Ben D. and Freeman, Frank, *An Experimental Study of the Educational Influences of the Typewriter in the Elementary School Classroom*, The Macmillan Company, New York City, 1932.

²Haefner, Ralph, *The Typewriter in the Primary and Intermediate Grades*, The Macmillan Company, New York City, 1932.

center in the actual manipulation of the keyboard. Their systematic use of this new medium thus depends upon a simpler keyboard.

With these advances into earlier and faster learning of fast touch typing has come what Wood and Freeman describe as a large social movement—the personal use of the typewriter as a substitute for the laborious pen or pencil. Personal typing opens a new and large field of school training. To the earlier appeal of the ease with which typing can be read has been added the appeal of far faster writing. The typewriter is now the medium for fast fluent expression of thoughts and even of written pleasantries. The typewriter is today's accepted writing tool for the personal use of the vast number of people capable and desirous of using it in their social life. This new mode should raise the tone of the volume of written output in schools and colleges. Noiseless portable typewriters in study rooms and school libraries should quicken the pace of reference work. As a part of social living the typewriter seems ready to enter into everyday school and home usage by most high school and many junior high school pupils.

The immediate problem that confronted our experiments at the University of Washington is now reduced to advancing the trend toward timesaving until the training period becomes so short that it ceases to be a burden either for the majority of pupil typists or for the school administration. Conventional typing classes do not arouse interest or

COMPARISON OF ATTAINMENTS OF PUPILS TAUGHT TO TYPEWRITE ON MACHINES EQUIPPED WITH THE SIMPLIFIED KEYBOARD WITH ATTAINMENTS OF PUPILS TAUGHT ON THE UNIVERSAL KEYBOARD

Dvorak-Dealey Simplified Keyboard

<i>Classification</i>	<i>Ave. No. of Fifty-Minute Instruction Periods</i>	<i>Average Attainment¹</i>	<i>Gain in Net Words a Minute per In- struction Per.</i>
9 High school pupils	36	40 net words a minute	1.11
12 High school pupils	38	43 net words a minute	1.13
44 University and adult students	26	32 net words a minute	1.23
39 Junior high school pupils	24	19 net words a minute	0.8
8 Adult students with previous typing experience	29	58 net words a minute	2.00
104 Beginning pupils	27.5	29.1 net words a minute	1.06

Universal Keyboard

<i>Classification</i>	<i>Number of Instruction Periods</i>	<i>Average Attainment</i>	<i>Gain in Net Words a Minute per Instruction Period</i>
Usual H. S. requirement for credit	90	18 net words a minute	0.20
Average H. S. attainment	90	25 net words a minute	0.28
Usual H. S. requirement for credit	180	30 net words a minute	0.17
Average H. S. attainment	180	35 net words a minute	0.20
Superior H. S. attainment	180	40 net words a minute	0.22
Washington state championship record	180	58 net words a minute	0.32
Washington state championship record	360	72 net words a minute	0.20

¹Attainment in net words a minute was measured in accordance with the International Typewriter Contest rules.



Pupils participating in the typewriting experiments conducted at the University of Washington.

lead to success because of the amount of time and effort required to attain reasonable accuracy and speed. A successful minimum of time and motion we place at fifty net words a minute within a single semester of training.

At the outset we were puzzled by typing errors that no one seemed able to explain. Among the best high school typists in the Washington competition, for example, 163 made a total of 1,000 errors within fifteen minutes on the 1,000 most common English words.¹ Nearly one-half of these errors were in the fifty most common words, usually spelled correctly by first and second graders. The accuracy gain after a second year of training was only two words a minute, while errors on the fifty most common words actually rose. We were forced to search for some basic interference underlying all pupil typing, and we found this in the patchwork keyboard. To listen to a good typist is to hear either breaks or a slowing in his rhythmic pace. If this typist is writing eighty words a minute with both hands stroking alternately, for example, with words such as "sad," "sadder," "saddest," "greatest," "minimum," typed entirely in one hand, this hand must either approximate 160 words a minute or drop the total speed to about forty words. Frequent idling of an entire hand while the other does double duty is a striking

aspect of the 47 per cent overload thrown upon the left hand, apart even from its repeated carriage throws. Here is a left-handed keyboard in a right-handed world. Similar overloads of weaker fingers while stronger fingers loaf add difficulties and condemn further the so-called universal keyboard.

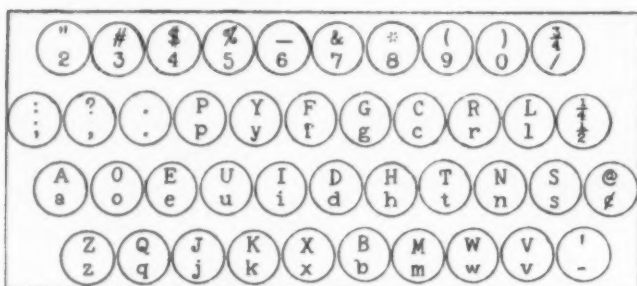
Yet the real situation soon seemed to us far more serious. We found that a fourth of all the usual typewriting is needlessly forced into more or less awkward stroking of the keyboard. For over 4 per cent of ordinary typing the same finger slowly taps two keys in succession. Fully a sixth of the usual two-letter combinations or digraphs reach across the barrier of what is alleged to be a "home" row above which the typist's fingers hover in the central home position. This large amount of wasteful finger hurdling is due to the chance fact that the early, original keyboard left most common English sequences out of the home row. Once out of the home row, these most common English sequences tended to fall into awkward positions. Indeed, most typewriting motions actually are forced to the upper row of keys and are to this extent wasteful. There is no genuine home row in the present keyboard. This is a school fiction told students, while its so-called guide keys often are obstructions for the fingers to hurdle. Slow motion pictures visualize in dramatic fashion this absence of an actual home row, this repeated idling of one or the other hand, and this forcing of excessive

¹Dvorak, August, and Ford, Gertrude C., *The Growth of Typewriting Speed and Accuracy*. The Balance Sheet, Oct., 1932, p. 66.

motions from fingers, entire hands and forearms.

Hitherto, insight into these destructive facts has been clouded by a widespread fallacy that typewriting, fundamentally, is isolated letter stroking. Glorifying the letter stroke in school typing classes has been a fruitful source for the plateau blues that soon overtake even moderately advanced typing students. Fast typing is inevitably slowed, since its speed and rhythmic pace depend upon the extreme overlapping developed between strokes in sequence.

By applying elaborate counts of some thirty-five million digraphs in running copy and also of longer letter combinations, Dvorak and Dealey found that some 10.5 million digraphs are stroked on the present keyboard by awkward, fatiguing and time-consuming finger reaches or hurdles. By making



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Arrangement of the simplified typewriter keyboard.

a measured fit of stroking sequences to the language sequences, the keys were rearranged. This rearrangement reduces the underlying interference by 85 per cent in the direction of more relaxed, rapid and accurate typing, learned in less time. On this Dvorak-Dealey simplified keyboard the finger loads now follow exactly the rank of each finger's ability. The work is smoothly balanced between the hands. Faster stroking by fingers of opposite hands has been built up to cover two-thirds of all ordinary typing. Since every syllable must have a vowel, the new keyboard concentrates the vowels in the left hand, together with common punctuation marks and the least used consonants. In the accompanying illustrative diagram of this simplified keyboard, it is evident that no word or syllable can be typed with the right hand alone and only an insignificant number can be typed with the left hand alone. The somewhat awkward interplay between adjacent fingers, the most common source of errors, is reduced tenfold. Slow serial tapping by the same finger is reduced fourfold, and its hurdling, as the worst sequence in typing, is practically ended. The bulk of the less efficient motions sent to the upper and lower banks of keys, is discarded. The placement of 70 per cent of running copy strokes in the home row should result at once in more rapid learning and easier operation. Almost all typed digraphs, or two-letter combina-

tions, now include the home row and 45 per cent never leave these middle keys.

Continuing experiments at the University of Washington demonstrate that this simplified keyboard permits a usual student achievement of fifty net words typed a minute within the desired minimum of one semester or less of training. During the past summer and the current year, experimental typing classes with 112 students showed consistently a general gain of one net word a minute for every practice period. Beginning high school pupils have performed well above the usual high school yearly rate after only forty-five periods of practice. The former slowing into persistent plateaus has disappeared. As outlined in the accompanying table, our student typing appears four times faster than the usual gain of 0.25 net words a minute for every practice period in the conventional high school class limited to the old keyboard.

This added saving in learning time seems supported by test results from typing classes using the simplified keyboard as part of the employment stabilization research in progress at the University of Minnesota. Its use reveals also the eagerness with which the unemployed during the present economic depression seek to improve their personal equipment by adding typing skill. This complete innovation, with its implied substitution of typewriting for handwriting, is now to undergo a further check-up under classroom conditions.

A Possible Annual Saving of \$10,000,000

The further investigation, already aided by a grant of portable typewriters from the Typewriter Educational Research Bureau and by the ample loan of dictating machines, should prove even more conclusively that the changes outlined are sound and economical. The schools should then develop good typists in one high school semester, whereas two or more semesters are used at present. By one added semester of applied typewriting, pupils should in one year reach attainments now requiring two and in some schools three years of typewriting. The cost of teaching typewriting per pupil should be reduced probably to one-half and perhaps to one-third the present cost. If from two to four times as many pupils can be accommodated with the present equipment and teachers, administrative funds will be correspondingly freed.

Even though estimates of economies are purely approximate, it seems not unduly optimistic to estimate a possible annual saving to the country's schools of \$10,000,000 in the cost of typewriting classes. This tremendous saving would make possible at no added cost the widespread extension, long overdue, of personal typing skill to a great many pupils in junior and senior high schools.

Utilizing the I. Q. Test in Practical Education

Present experimental procedures foreshadow wholesome progress toward technical measurement of general and special abilities and toward helping the child to make the most of his capacities

By JOSEPH PETERSON, Professor of Psychology, Peabody College, Nashville, Tenn.

THE intelligence quotient (I. Q.) is the simple ratio of a person's mental age (M. A.) to his actual or chronological age (C. A.). This applies, of course, only to individuals who are still growing in intelligence. Usually this ratio is multiplied by 100 to do away with decimal fractions.

Several difficulties occur in determining both the M. A. and the C. A., the least of which is ascertaining the child's exact age and his birthday. If either the M. A. or the C. A. is wrong, the I. Q. is necessarily incorrect. The mere months or years that a child has lived are important only on the assumption that his physical growth has been normal—that he has moved in his bodily growth as far from the birth state as is usual for children.

Many Matters Affect the I. Q.

Commonly the point of beginning has been the state of development at birth; that view is inherent in the Binet system of mental ages since both the M. A. and the C. A. are counted from birth. But often the rate of physical growth is not normal, as in cases when disease or nutritional irregularities have interfered, or in cases of accelerated growth toward maturity due to sex or race factors. Often, for instance, girls mature faster than boys and through certain growth periods stand higher in school performance or in I. Q. measurement, as compared with boys, than they do at maturity. Matters like these, to be considered more fully later, all affect the I. Q. and must be seriously considered in any exact determination of the comparative abilities of children, usually spoken of as intelligence.

Next come problems regarding the M. A. The general conception of the mental age—of comparing the performance of any child to be rated as to intelligence with the average performances of normal children of different age groups—is much older than the Binet system of tests. However, it was definitely worked out by this French psychologist

in his second test scale of 1908 and was implied even in his first scale in 1905. This first scale was purely a tentative device arrived at after much preliminary experimentation to show that it is possible to determine in a precise and truly scientific way the mental level of an intelligence, to compare this level with a normal level, and consequently to determine by how many years a child is retarded. It was worked out on the responses of fifty children, about ten each of the ages three, five, seven, nine and eleven years. In this first tentative scale thirty tests were arranged in an ascending order of difficulty, from this lowest test: "1. Visual coordination. Noting the degree of coordination of movement of the head and eyes as a lighted match is passed slowly before the subject's eyes" to this highest test: "30. Giving distinctions between liking and respecting a person; being sad and being bored." The normal subjects used for this tentative standardization were not only graded properly in their schools for their ages, but they were tested on the day of attaining the ages mentioned above.

Binet Did Not Use the I. Q.

This plan, whether or not its merits and limitations would place it above the one known to most testers, was abandoned in the 1908 Binet scale in which several test items were arranged in each successive year level from three to thirteen years, and also in the 1911 revision which had tests up through fifteen years to the adult level but omitted year levels thirteen and fourteen. In these later scales the criterion for fitting any acceptable test into a year level was that approximately the middle 50 per cent of the children of that age should pass the test according to the designated standard of accuracy.

But ages were not defined so accurately and children chosen for standardization were not selected for so strict normality as in the tentative scale of 1905. Moreover, the percentage of children of the

given age who passed the test were not, for obvious practical reasons, strictly controlled. It would be too difficult to get a sufficient number of tests passed by precisely 75 per cent of the children in the age level. Any test which met the three criteria of really measuring intelligence as conceived by Binet was accepted for a given year level if approximately one-half to 80 or 90 per cent of the children of that age passed the test. Any one test in a year level was thus frequently too easy, but it was balanced in the group of tests in that level by a test or tests found to be slightly too hard, and vice versa. Moreover, Binet recognized explicitly that several of the tests were considerably influenced by schooling, and often rather suddenly so, as, for instance, when a subject that was new to the child confronted him on promotion to a higher grade. Binet often discussed such tests and, while they generally served his purpose on children who had been regularly schooled, he explicitly advocated their exclusion in any year level when children to be tested had not had the regular school advantages.

While Binet did not use the I. Q., he noted that a given absolute amount of retardation, say two years, had to be carefully considered in rating the intelligence of the child because it was relatively more serious at an early age, say six years, than when the individual was older, say twelve or fifteen years. The later use by Bobertag, Terman and others of the simple ratio M. A./C. A. which gives the I. Q. has tended in practice toward a much more mechanical procedure in testing, by nonexperts at least, and in a more rigid and impoverished conception of the results obtained in any test. To many practical school men a test score, however mechanically or ignorantly obtained, is directly and completely a measure of a child's intelligence. For example, a principal in Arkansas wrote that an I. Q. obtained on a school boy showed that he was feeble-minded even though he was doing satisfactory work, and asked whether or not the boy should be removed from the school and put under special training.

Serious Mistakes Have Been Made in Tests

Certainly grave errors have been made in intelligence testing as well as in the interpretation and use of results, but it is beyond question that valuable contributions to psychology as well as to practical education have resulted even from the use of the I. Q. This ratio—and it is nothing but that, with the numerator (M. A.) often seriously misplaced from its true value—can be exactly expressed by a simple number and thereby communicated to others and kept in records for later comparisons and corrections. It has thus given

definite data as results of the tests. Such definite results were inevitably to lead to contradictory data from tests by different investigators. These differences were equally sure to be quantitatively studied as to their relationships to various factors in the environment, to hereditary and disease conditions, to possible differences in test procedures and degree of encouragement. Because the contradictory results were so definite, they have thus been hypothetically attributed to this and that condition and further investigated by real experimental procedures instead of being subjected to the interminable verbal discussions still characteristic of much current social and educational research.

Such experimental procedures, often if not always beginning with certain imperfect technique, react backward on the earlier methods and data, clarifying inadequate concepts, improving techniques of measurement, and revealing numerous new aspects of a problem so that a whole system of techniques and its related data improve *pari passu*. Such is the stage of testing today but our experience and knowledge are somewhat ahead of existing scales, thus foreshadowing wholesome progress in technical measurement of both general and special abilities, and of all sorts of human responses.

Tests of the Binet Type Are Inadequate

We need a considerable number of forms of any test used in measuring I. Q.'s so that we can check carefully on the reliability of successive I. Q.'s taken at increasing ages from rather early childhood to adulthood. For all important measurements, and especially for research work, present tests of the Binet type are rather inadequate. A number of studies have been carried out on such basic problems as the constancy of the I. Q. It is obvious that if there is much change in this ratio as an individual grows from early childhood to maturity, little if any forecasting of success either in school or in later life is possible. There is little doubt that many of the variations found in the I. Q.'s reported in successive tests on the same children are due mainly to more or less transient changes in health conditions, motivation and activities immediately preceding the tests, and also to various practice and fatigue effects. Mere unreliability in the M. A. determinations is often set down as change in the child's intelligence, which would be determinable only by several adequate samplings of his performance. Intelligence may include motivation, in the sense of inner drives as affected by emotional disturbances, fatigue, hunger, nutritional and blood conditions, which may be far from constant throughout the different widely separated test periods made in studies of

I. Q. constancy. But the successive tests are, for scientific purposes, usually much too local, or immediate, or contingent, to be confidently used for comparative purposes.

The conception of M. A. needs further clarification, as *Thurstone*¹ has pointed out. Is a child's M. A. the average age of the children, whatever their several ages, who make a performance score equal to his own score? Or is it the age of children in some particular age level only whose average score equals his own score? These two ages are different and would be identical only if the correlation between the performance scores and the ages of the children were 1.00. Such a correlation has never been found or even closely approached and the disparity in the two mental ages derived by these methods increases as the value of the correlation decreases.

What Is Needed

Another difficulty with the M. A. as actually used is that it can go only as high as the age corresponding to the average performance of adults goes. Very bright children above twelve or fourteen years of age surpass such a norm, and cannot really be tested by the I. Q. technique; M. A.'s as high as their test scores require are in all scales mere artifacts, constructed by other methods than are the M. A.'s of lower levels in the scale. Even the best of these devices conceivable—testing large numbers of bright children of different I. Q. levels above 100 and continuing the tests on different forms of a good Binet type scale until the children have reached adulthood—has not been used. The I. Q. of a good senior high school or college student cannot be found. Probably a better method than to make such a measurement possible is to use only improved adult performance scales of some of the best types now available, stating results in standard deviation units or in the less satisfactory but more easily understood percentile scores. In any case, we need both for children and for adults scales which are not all directly or indirectly standardized against school criteria. We need tests which do not correlate highly with each other but each of which does correlate rather markedly with some good and sensible criterion of efficiency. That would involve, of course, some good tests of special abilities, which have proved extremely hard to construct. Tests of special abilities are receiving an enormous amount of work at present but progress and satisfaction come slowly.

Many readers will be somewhat surprised at Professor *Courtis*'² present emphasis on develop-

mental ratios, especially as applied to the cutting of permanent teeth. As early as 1905 to 1910 *Pryor* and *Rotch* published a series of studies on the skeletal development, particularly as revealed by x-ray photography of bones in the wrist and hand. In 1908 Doctor *Crampton*, then assistant director of physical training in the New York City public schools, added the concept of physiologic age as indicated in the onset of pubescence and also in the ages at which the various permanent teeth mature.

The reader will find an excellent review of these studies and views in "Physique and Intellect," by *Paterson*. The new movement involved psychologists who saw possibilities of associating such anatomical and physiologic development with neural development and of employing development ratios in mental testing as probably more important indicators of physical maturation than mere age (C. A.). *Paterson* traces these studies in different laboratories by *B. T. Baldwin*, *Woodrow* and *Lowell*, *Freeman* and *Carter*, *Gates* and others, giving references. In brief, it is shown that when C. A. is properly controlled experimentally, as was done in the later studies, there is either zero or very low, and mostly unreliable, correlation between either M. A. or I. Q. on the one hand, and bone development, number of permanent teeth cut and age of onset of pubescence on the other. Moreover, appreciable correlations do not exist even between these various indices of physical growth themselves. Dr. *T. Wingate Todd* has recently published significant results on bone development.³ In unusually thorough studies of more than 1,000 children he differentiates nine stages in the progress of epiphyseal maturation and union and finds that the age order of union is perfectly definite and sound in healthy human beings, but that pathologic disturbances may modify pattern sequences and dates.

Would Require Testing at Three Stages

From these numerous studies there seems little to be gained in the study of tooth eruption, even in pathologic cases, with references to appraisal of mental possibilities in children. Professor *Courtis*' statement that certain data presented by him "lend no support to the idea that the I. Q. indicates any limitation in capacity," might mislead his noncritical readers and tend to bring back uniformity of training for all.

Professor *Courtis* apparently believes that test data are significant only when they are sufficient to enable one accurately to plot a growth curve. This would require testing at a minimum of three stages. If the growth data have reasonable regu-

¹*Thurstone*, L. L., *The Mental Age Concept*, *Psychol. Rev.*, 1926, vol. 33, pp. 268-278.

²*Courtis*, S. A., *What Does the I. Q. Really Measure?* *The Nation's Schools*, Jan., 1933.

³*Todd*, T. Wingate, *Child Development*, 1930, vol. 1, pp. 79-89; 186-194, and 298-310.

larity, they can be fitted well by the curve $y = ki^r$ (where k , i and r are positive constants, i and r less than unity); if they are not regular, there is indicated, of course, a need of searching for disturbing causes. Among the infinite set of those possible functions flexible enough to handle very diverse growth situations, this one is particularly simple and manageable, and Professor Curtis has tabulated it and developed for it careful and detailed techniques for the analysis of growth.¹

Toward the desirable end of helping each child make the most of his potentialities, whatever his I. Q., it seems worth while to suggest the value of a variety of tests which could give a comprehensive survey of the mentality of the individual, even if sufficient retests for growth curve analysis could not be made.

The Administration of the High School Cafeteria

By J. B. STEPHENS

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A recent study of high school cafeterias in Illinois and neighboring states reveals interesting and useful facts concerning their administration. The study covered schools with enrollments ranging from 375 to 3,000. The general character and value of high school cafeteria service depend upon (1) provision made by the school authorities for housing the cafeteria, (2) adequacy of the equipment and (3) efficiency of the administrative procedure.

The number of pupils served by the cafeteria varies according to the nature and location of the school. In township high schools that draw their pupils from a large geographic area and conduct classes on a continuous schedule with more than one lunch period, cafeteria accommodations are necessary for three-fourths of the enrollment; on the other hand, in city schools that are near a business section, cafeteria service is required for only a relatively small percentage of the enrollment. The average number of pupils served by all the cafeterias which were investigated in the course of this study is 35 per cent of the total enrollment of the schools.

Approximately one-third of the schools have only one lunch period a day; the others have two or more lunch periods. By planning class schedules for more than one lunch period a day and by utilizing the same cafeteria equipment, a larger number of persons can be accommodated than can be

seated at any one time. This minimizes the expense of operation.

The amount spent per person for each meal varies from 12 cents to 25 cents, the average amount being 18 cents. Even with these small amounts, several schools are doing a business in excess of \$30,000 a year. The average amount of money handled by each of the cafeterias is \$15,541.57 a year.

Although profits are admittedly not the chief aim of the cafeteria, the manager is none the less anxious to operate on a paying basis. A few schools constantly regulate prices so as to avoid the accumulation of a profit. Most of the cafeterias investigated, however, are successful in accumulating a surplus. The average annual surplus is \$817.22, or 5.3 per cent of the average yearly income of the cafeterias. A small number of the schools use the surplus funds to finance school activities not related to the lunchroom, but most schools use such funds to purchase new equipment and replacements for the cafeteria. However, if all the cafeterias assumed their just responsibility for every item of their operating expense, such as the salary of the manager, janitor service in the cafeteria proper and gas used for cooking, many would operate at a loss.

The average cost of cafeteria equipment for each of the schools is \$8,811.12, or \$26.65 per person that can be seated at one time. More than one lunch period lowers the cost to \$11.63 per person accommodated.

The Average Salary of the Managers

Cafeteria employees who are employed for the greater portion of the day receive an average salary of 39 cents an hour. This amount, when considered in terms of the cost per meal served, is 3.6 cents. In addition to the full-time employees, most school cafeterias use pupils for the serving of the meals. The pupils work on an average of one class period a day. The remuneration for pupil service is usually a lunch that shall not exceed 26 cents. When cash is paid in lieu of food, the average amount is 33 cents an hour. The total expense of preparing and serving a meal averages $5\frac{1}{4}$ cents a meal, or 28 per cent of the amount spent per meal.

Approximately 90 per cent of the cafeteria managers have had college training. Their annual salary averages \$1,764.44. Taking into consideration the fact that some of the managers do part-time teaching in addition to their duties in the cafeteria, the amount of money spent a year for cafeteria management averages \$1,231.81, or \$3.55 per pupil, which is 10 per cent of the money spent by each pupil a year in the cafeteria.

¹Curtis, S. A., *The Measurement of Growth*, Brumfield & Brumfield, Ann Arbor, 1932.

What the Depression Is Doing to the Rural Schools

The depression has hit rural schools much harder than city schools. The present situation, however, presents an excellent opportunity to effect some desirable economies in rural education that have long been past due

By W. H. GAUMNITZ, U. S. Office of Education, Washington, D. C.

THE economic crisis is making itself felt in the rural schools in many ways. Schools are being closed, terms are being shortened, teachers are being dismissed, those remaining are carrying heavier loads, salaries are being cut, school building and repair work have largely come to a standstill, vital school services are being curtailed or entirely eliminated. School revenues are becoming less and less. States and localities are making reductions in tax rates, property values are shrinking, taxes on all properties, but especially on farm properties, are becoming more and more delinquent.

This is not a cheerful picture. But of course there are many cheerful aspects in the situation. From all parts of the country come reports of heroic deeds on the part of teachers. Progressive rural school leaders in many localities are finding the present extremity an opportunity to reorganize their schools, improve administrative practices and effect various economies.

In response to a recent questionnaire sent to all superintendents of county, district, town or other

types of rural school systems requesting information on what the depression is doing to these schools, the U. S. Office of Education received 1,145 usable returns. This number constituted 32.3 per cent of those sent out. All states except Delaware, which, strictly speaking, does not maintain a county system of schools, were represented. From only five states did the returns represent fewer than 20 per cent of the total number of counties in those states.

The questionnaire made an effort so far as possible to gather data for the present year. The questions were arranged so as to get data for the school year 1929-30, the year when the depression started, and for each school year thereafter. Since the forms were sent out in September, 1932, it is obvious that the figures given for the present year had to be based upon the plans for the year rather than upon actualities. For example, data on salaries paid to teachers during the present year were on salaries contracted for rather than those actually paid. It might be pointed out in passing that there is considerable evidence that



A modern rural school. What does it profit a people to build good schools like this one if their doors remain closed?

many of the commitments of rural school boards during the past summer have not been fulfilled. Failing tax receipts have either forced new plans and new agreements or the schools have been closed and the agreements abrogated.

Reductions Negligible in First Depression Year

Beginning with school revenues, the eventual source of most of the other readjustments now taking place in the schools, the data showed practically no reductions from the period 1929-30 to 1930-31, that is, the first year of the depression. Some states showed reductions in current expenditures for that year but as many others showed increases. It was evident that up to 1931 these fluctuations were comparatively slight. Such reductions as were found probably as often as not were not the result of the depression. They represented the usual ups and downs of school expenditures.

For the next year, however, that is, from 1930-31 to 1931-32, all except six of the states in the wealthier Northeastern section of the United States, Connecticut, Massachusetts, New Jersey, New York, Pennsylvania and Rhode Island, showed reduc-

TABLE I—COMPARATIVE CHANGES DURING THE DEPRESSION IN CURRENT EXPENDITURES OF CITY AND RURAL SCHOOL SYSTEMS

Geographic Sections	<i>Decreases or Increases in Per Cent</i>		
	<i>City School Systems</i>		<i>Rural School Systems¹</i>
	<i>1930-31 to 1931-32</i>	<i>1931-32 to 1932-33</i>	<i>1930-31 to 1931-32</i>
North Atlantic	+2.7	— 3.0	—1.3
North Central	—4.1	—10.1	—7.0
South Atlantic	—1.7	— 8.3	—7.4
South Central	—3.8	—15.6	—8.1
Western	+0.6	—13.1	—8.2
United States	+0.2	— 6.8	—5.0

¹Current expense data for rural schools for the year 1932-33 were not available.

tions. Some of the states showed extremely large cuts by this time. Arkansas counties, for example, reported an average cut of 24 per cent; Mississippi, 21 per cent; South Carolina, 20 per cent; North Carolina, 18 per cent; Utah, 17 per cent; North Dakota, 15 per cent; South Dakota, 14 per cent, and so on. Individual counties showed reductions in current expenditures during that year as high as 58 per cent in Mississippi, 54 per cent in Arkansas, 51 per cent in North Dakota and Michigan, 48 per cent in Indiana, 46 per cent in North Carolina and 41 per cent in Oregon.

For the country as a whole these reductions averaged 5 per cent for the year 1930-31 to 1931-32. This means a total reduction for one year of about \$39,000,000. Data on school expenditures could not be obtained for the present school year,

but figures on salary cuts provide evidence to show that at least another 5 per cent cut was anticipated by those responding to the inquiry. Because of failure to collect taxes, the funds actually becoming available have probably been reduced considerably below those anticipated. Even some of the wealthier states like New Jersey are now reporting serious conditions in the matter of available funds. Table I provides by geographic sections a brief glimpse of how much expenditures have been pared.

So much for reductions in current expenditures. Turning our attention for the moment to capital outlay or expenditures for school building, it is estimated the total amount spent for school construction in the United States during the past two years has been reduced by about 57 per cent. From data reported by the 1,111 superintendents of rural schools responding to this phase of the study it may be estimated that fully 4,000 school communities were during this period greatly in need of new school buildings but delayed erection of them because of lack of funds. Most of the communities postponing needed construction work were found in the Southern and Midwestern states, obviously, those most closely dependent upon agriculture. Approximately 29,000 of the rural schools were reported as operating during this period with abnormal lack of equipment and supplies; and about 27,000 were delaying greatly needed repairs. Thus it may be seen that despite low costs for labor and for building materials, communities are choosing to delay needed building and repairs of schools.

Salaries Cut 15 Per Cent in Twelve States

Turning now to the matter of teachers' salaries, the study found an average cut from 1930 to 1933 in the monthly salaries paid of slightly more than 10 per cent for the country. Table II shows that salary cuts of elementary and secondary teachers are about equal. Comparisons with city schools show rural teachers to have suffered somewhat heavier cuts in all parts of the country except the Far West. Mississippi led by cutting rural salaries by more than one-third; the states of Arkansas, North Dakota and South Dakota showed average cuts of about one-fourth, and Michigan and Nebraska showed reductions in salaries of about one-fifth. In a total of twelve states rural teachers' salaries have been cut an average of 15 per cent or more since the beginning of the depression. Of course, individual counties could be cited in which the cuts in teachers salaries greatly exceed the state averages. In some rural communities where salaries have always been low, even in the days of so-called prosperity, salary reductions of as much as 50 per cent have been reported.



Citizens in the making. Poor as they are, schools such as these provide some educational opportunities. Now even these are denied to many boys and girls.

A good deal has appeared in the public press concerning the reductions in school terms and the closing of schools. Except in a few states, namely, Alabama, Arkansas and Mississippi, the average reductions in terms of rural schools were less than 10 per cent by 1931-32. Most of the states showed negligible changes in this regard during the period in question. Slight increases were noted nearly as frequently as slight decreases. However, in as many as twelve states individual counties were found in which school terms had been cut by a month. In four others, Utah, New Mexico, South Carolina and Tennessee, individual counties had cut the average school term by as much as two months. In some Arkansas counties school terms were cut by one-third and some Alabama counties by one-half. For the present year cuts larger than those cited above have probably been made.

The problem of the effect of the depression on the amount of education made available to rural children was approached from another angle. Assuming that the returns were representative, the data showed that in 1931-32 there were about 8,000 rural schools which had been forced to close their doors before the end of the comparatively short term planned for that year. It is fairly certain that many more schools have actually been forced to close early this year than had been anticipated. The number will probably exceed 10,000 for this year.

So far as could be learned there were seventy-

one school communities which for lack of funds had entirely closed their schools without making provisions for the education of the children concerned. These seventy-one schools were reported from a total of fifteen states. Except in the case of Arkansas, which reports twenty-four such school communities from a single county, most of those reported to be unable to provide any school education for their children represent isolated cases. These communities are chiefly in the Western states and in areas of sparse population.

Further information could be cited relative to a number of other changes that have taken place in the rural schools because of the depression. For example, the data showed that these schools employed approximately 4,600 fewer teachers in 1933 than in 1930. The reduction in the teaching staff of the elementary schools is much greater than this, but increases in the staffs of the rural secondary schools offset some of the decreases in the elementary.

It should be noted that despite all the reductions there is clear evidence that during this period of declining revenues and reductions in teaching staffs considerable increases have occurred in enrollments. Recent studies have shown that the child's school life is being extended at both ends. For the schools of the United States there has been an increase during the last decade of 60 per cent in the kindergarten. A slight loss has taken place in grade one, grades two to four have shown increases

of about 6 per cent each, grade five increased 14 per cent, grade six, 22 per cent, grade seven, 36 per cent, and grade eight, 39 per cent. High school enrollment has doubled in the last decade. During the four-year period, from 1926 to 1930, the proportion of rural children attending high schools has been increased from about 22 per cent to about 30 per cent. Recent data show that this rate of enrollment increase has been considerably accelerated during the three years since 1930. Indeed, with the recent movement of urban populations to rural centers the responsibilities of the rural schools both as regards numbers of pupils and the complexity of the problems involved have greatly increased. Estimates as high as 3,000,000 have been placed upon this countrywide migration. It should be kept in mind that many of these migrants come more or less as indigents and therefore they contribute nothing to the taxable wealth of the

TABLE II—COMPARATIVE CHANGES DURING THE DEPRESSION IN SALARIES PAID TO TEACHERS OF URBAN AND RURAL SCHOOLS¹

Geographic Sections	Decreases or Increases in Per Cent			
	City School Systems		Rural School Systems ²	
	1930-31 to 1931-32	1931-32 to 1932-33	1930-31 to 1932-33	
			Elementary	Secondary
North Atlantic	+3.3	-0.7	-2.1	-2.5
North Central	-3.1	-10.3	-16.0	-13.5
South Atlantic	-0.2	-5.2	-19.1	-13.0
South Central	-4.9	-15.1	-17.8	-19.9
Western	+1.2	-12.3	-7.4	-7.0
United States	+1.1	-5.0	-10.6	-10.3

¹Data for urban schools were based upon budgets for annual salaries; those for rural schools were computed from averages of monthly salaries.

²Computed from twenty representative states. Comparable figures for changes from 1930-31 to 1931-32 not separately compiled.

communities. The present crisis of the rural schools therefore has two major aspects, namely, greatly reduced revenues and at the same time greatly increased responsibilities.

The study of the effects of the present economic situation upon rural schools has revealed many facts which have far-reaching implications. Only the briefest reference can be given to a few of these. First, all available data point to the conclusion that cuts in rural school salaries and in current expenditures came earlier and have gone considerably deeper than those in city schools. Indications are that to date these rural school reductions are probably about twice as great as those in the cities.

The second fact that should be pointed out is that the effects of these reductions upon rural education are relatively greater than the same percentage cuts would be upon the city schools. The latter have a great many services that are desirable and valuable but which when funds fail can

be curtailed without cutting into the minimum essentials of education. Since, on the other hand, the programs and services of the rural schools have seldom gone beyond the bare essentials of the tool subjects, and since here salaries, term lengths, supervision, buildings and equipment and the like are always far below commonly accepted standards, cuts as deep as those noted above are made at the expense of child welfare, both physical and educational.

The third consideration resulting from the effects of the depression upon the schools is that the present situation presents an excellent opportunity to effect some desirable economies in rural education. Some of these economies have long been past due, but entrenched interests have thus far been able to prevent bringing them about. In almost every state there are both elementary and secondary schools which enroll only from one to ten pupils each and where the per capita costs run inordinately high. With a coordinated plan involving itinerant teachers, correspondence lessons, a tutorial system of the type experimented with in Ohio, dormitory provisions, consolidation, transportation and whatever else may be necessary, I see little excuse for these extremely small schools anywhere.

An Opportune Time to Change Tax Laws

Then there is the problem of an innumerable number of school trustees, each of whom is a potential source of expense. So long as local trustees purchase their own school supplies, employ neighbors and relatives as teachers, and in other ways exercise political preferment and influence so long will there be unwarranted drains upon school funds and handicaps to school efficiency. Local control through such trustees too often represents an extreme democratization which too often proves to be an expensive luxury. This is a good time to eliminate such drains upon school budgets.

This is also a good time to compel much needed changes in the tax laws. The nation has suffered no loss in actual wealth during this depression. No real wealth has been destroyed; neither have the wealth producing agencies become less capable of producing wealth. Indeed, this country has constantly increased its wealth. Its surplus is constantly mounting. The problem then is not so much one of cutting essentials because tax funds are not available but rather the problem is one of redistributing the tax burden so that those into whose hands the wealth has gone will be compelled to assume an equitable share of the cost of all essential social services. The general property tax upon which education is largely dependent has obviously become obsolete and unfair.

New Times Demand Change in Teacher Specifications

Education must lead the way in preparing people for the new phase of civilization. Teacher specifications will need to be altered to meet the new conditions

By FREDERICK M. HUNTER, Chancellor, University of Denver

THE theme of the frontier has a curious lure and a flavor of adventure. This probably arises from the fact that it epitomizes so much of the past experiences of the human race. The conquest of frontiers has again and again been a major goal of mankind. But we live now in a day when the conquest of the last frontier is proclaimed and no longer can the "Star of Empire westward take its way."

In past eras when danger threatened, a tribe or a nation could relieve home pressure and escape trouble by acquiring new territory through occupancy or conquest. Now civilization must face its problems. Nations, confronted by bankruptcy or collapse, cannot flee to new lands to build new cultures and record new victories. Conquest of unpossessed territory must be replaced by conquest of the acute and chronic diseases of culture and civilization. But grim as may be the outlook, there is nevertheless adventure about it. This new kind of conquest challenges scientist and philosopher, economist and statesman, humanist and teacher as they have been challenged only a few times in recorded history.

Education Has Never Shunned Responsibility

The gauntlet is directly hurled at American education. What shall be its program? Especially what shall be the character, the training, the adequacy of those who teach and lead American youth? In comparison with standards of the past, and even of this present transition period, what are the necessary differences in the equipment of teachers? To venture even a tentative answer requires at least a glance at the position of the modern scheme of education in the light of its relationship to the principal goal of social progress in the recent periods of Western civilization.

Education in America has never shunned responsibility. It has espoused the cause of a democratic philosophy of society with a full sense of cus-

tomianship and an attitude of militancy. American education today holds itself to a large degree responsible for the permanence and the perpetuation of the ideals for which humanity has struggled through the centuries.

One Great Quest Has Reached Its Goal

Democracy as a form of government was invented by the Greeks. They operated it more or less hypocritically for the benefit of a select class supported by a slave population larger than the number of freemen. Anglo Saxon England, struggling with the divine right of kings in the hands of the Plantagenet and Stuart families, added to the Greek idea the conception of representation. American patriots fighting for the rights of the middle classes of both England and America, under the inspired guidance of a few leaders of the upper and property owning classes, brought the custodianship of democracy to the Western continent. Here another increment adhered through the genius of the statesman who formulated, stated and put into operation the Constitution of the United States. It was the device of federal representation and local self-government. Through the American use of democracy one great quest of the ages has reached its goal—political liberty in its most complete manifestation has become a philosophy of society. Whatever the ills of modern civilization, and however much at fault the present social order may be, nevertheless, one element of human happiness has been attained, one fundamental longing of human beings has been satisfied. Says Edgar A. Mowrer in "This American World":

"Of the essential American ideas Europe as a whole possesses no single one. These qualities are, in my opinion, English liberty, or the spirit of free cooperation and compromise; right will, or the belief that man can be molded to any conceivable pattern and desire by proper thought and effort, and natural equality, the feeling that despite ex-

ternal variation human beings are in some mysterious way equal in possessing the unquenchable spark that makes them men."

American education with its great diversity and its intense adherence to local control has been irrevocably dedicated to the preservation of this philosophy of living. The teaching profession of America has assumed custodianship of the ideals of democracy as conceived by the Greeks and transmitted and modified through the centuries by the peoples struggling for personal freedom and the right of self-expression.

The Distinguishing Traits of the Transition Period

The pattern for the educational system throughout has been formed in conformity with this ideal. The specifications for teachers upon all levels are established by the requirements of life begotten by this social order.

Now we face another picture. We are facing a frontier of a kind not heretofore within the conquest experience of mankind. Here before us are foemen of a new form and mien. The present period of confusion and transition is the result.

What characteristics mark the period of transition and its subsequent times? In what way do these differ from the chief features of the past era? How do they affect the type of teacher and his education?

The main distinguishing traits of the transition period and the immediate future are these: (1) Great rapidity of change, much more rapid than in any previous period of history. (2) Complete dominance of the scientific method in attacking the problems of society and of civilization, much more complete than at any previous period or at the present time. (3) Transfer of attention and emphasis from tangible and materialistic problems to problems of human relations and social progress. (4) An intense creative urge in literature and the arts derived from an age-old quest for beauty and an appreciation of highest spiritual values.

The teaching systems of Western civilization will have to meet the specifications dictated by these new characteristics and this new emphasis.

In discussing the peculiarities of the time two principles should be kept in mind: (1) Civilizations about to disappear have been revived by study and research into the forces, achievements and triumphs of previous great civilizations, that is, from the dark ages to the renaissance. (2) Evolution downward as well as upward is possible to cultures or civilizations. A striking example on the American continent is the Mayan Empire, the first clearly defined date of which was 161 B.C., the last, 1458 A.D.

Civilizations have always been wrecked by forces

within. The attackers from without have always been opportunists taking advantage of internal decay. Western civilization should be able to do something about its present plight. Its leaders recognize its weaknesses and its diseases and diagnose them with much precision. The coming of the renaissance was made possible by much less knowledge on the part of the leaders of the day. There was no established science, no knowledge of whether human society moved upward or downward. There was no general plan for the spread of information, such as the present system of education in Western civilization. The great armies of teachers, pupils, scholars, scientists in every Western nation form an agency in civilization that should be able to do immeasurably more to create an era as impressive in comparison with the present day as was the renaissance in comparison with the dark ages.

Now, let us consider briefly the demarcations of this new frontier which affect profoundly the chief instrument for the maintenance of its vitality, namely, the teachers. The first of these is the great rapidity of change. Why should we accept this as one of the characteristics of the new era? Biologic evolution is slow. Evolution of human institutions has been almost imperceptibly slow, for example, the growth of moral ideas as portrayed by Hobhouse and Westermarck. But from the known facts of both biologic evolution and the evolution of human institutions comes the evidence of a change in rates. To quote Prof. William K. Gregory, Columbia University, "We must avoid the serious logical error of assuming for man the low average rate of evolution that obtained in the nonprimate mammals." The conclusion is that on the upper levels of biologic evolution the rate has been much more rapid.

A New Requirement in Teaching

The same law holds good in the case of social progress. The rate of change in the early history of the race was slow. In some senses and comparisons it is still slow. But the tendency toward a much faster rate of change in social progress is obvious.

No elaboration is necessary to convince an open-minded person that those who would solve the present situation face conditions that are changing with a rapidity heretofore unrecorded. The belief in social change by imperceptible stages is no longer tenable. Accordingly those who lead and prepare the young are forced to recognize a new requirement in their professional preparation and education.

The second great characteristic of the transition period and after is the complete dominance of the

scientific method in attacking the problems of society. This contention of the dominance of science is supported by at least two great accomplishments in our own day. The first is the abolition of the Malthusian fear, that is, the fear of racial starvation as a result of population increase. The second is the elimination of the fear of the depletion and extinction of the human race from plagues or devastating epidemic diseases.

Malthus' Theories Have Been Wrecked

Science applied to production and transportation has completely negated the fear of starvation. I do not mean by this that great portions of the race are not still the victims of famine. They are, and millions starve even today in many parts of the world. But science has made it possible for the production of food and the other necessities of life to keep pace with, and even to outstrip, the natural increase in population. In fact, production has been so overdone that millions of people are in want because of an excess of products. Scientific production and transportation methods have wrecked Malthus' theories. Of course, there remain yet the tremendous problems of creating purchasing power and equitable distribution of wealth and commodities.

The conquest of plagues and devastating epidemics has been equally thorough, thanks to the work of scientists, such as Pasteur, the discoverer of the germ theory of disease; Lister, the father of antiseptics; Koch, the arch foe of tuberculosis; Reed, the intrepid investigator of yellow fever; McLeod and Banting, the conquerors of diabetes; Fogelson, the healer of stomach ulcer, and Kendall, the inventor of "Medium K" and discoverer of life cycles of bacteria.

Yellow fever which for 400 years had claimed an average of 50 per cent of its victims and which invaded Rio de Janeiro as late as 1898 with a mortality of 94.5 per cent, has virtually disappeared from the temperate zone. Bubonic plague, which in the thirteenth and fourteenth centuries destroyed from 50 per cent to 75 per cent of the population of many sections of Europe, has been controlled and confined to limited areas. It is true that cancer, heart disease, and influenza still ravage the civilized world, but there is conclusive evidence that science has the tools to solve these problems.

How shall education create an attitude free from superstitious prejudice and opposition? How shall it teach appreciation and understanding of what science has done? How shall it provide skilled scientists in the field where problems block the way?

The third characteristic of the new period is the transfer of emphasis from tangible and material

problems to issues of human relations and social progress. From the beginnings of the modern era scholars and scientists have been occupied with the mastering of the tools of knowledge and research. The application of these new tools of culture has naturally followed the lines of first necessity. What was required immediately for existence and livelihood came first. The first sciences to be perfected, too, were those whose laws were most easily discernible and whose materials were tangible and easiest of manipulation. It is a certainty that science offers the implements of conquest. Great achievements in behalf of civilization are already recorded. Now the array of obstacles to progress, of dangers to well-being, even of threat of destruction, are of an entirely different nature. They all concern human relations and how men shall live together. Instead of questions concerning the composition of matter, the nature of the universe, the power for production machinery and the causes of disease, the world today is faced with the problems of a substitute for war, controlling crime, abolishing unemployment, equalizing wealth, changing the tax plans, creating purchasing power and the prevention of economic depressions and panics. Science is challenged to conquer the fields of economics, sociology and psychology. Bertrand Russell in his book "The Scientific Outlook" says: "I believe that if a hundred of the men of the seventeenth century had died in infancy, the modern world would not exist. Of these one hundred men, Galileo is chief."

The outstanding peculiarity of the new period will be, I believe, a philosophy of life begetting an intense creative urge. The inherent genius and intellectual power that have invented and managed the gigantic institutions of material progress of modern times will be turned into the creation of architecture, sculpture, painting, literature and music. Hillaire Belloc says in his monograph, "The Contrast":

Man's Quest for Beauty

"Modern America is full of an incipient but eager and even violent creative ferment in letters which is entirely its own. Everyone must admit either that the gap or lull has come to stay and that American letters will produce nothing more (a conclusion which seems to me at least fantastic and even absurd, given the intense energy of the nation and its manifest creative power) or he must admit that something new will follow the present hesitation. It seems to me as certain that something new will come as that the new great cities have already come. . . . The fuel is there; nothing is needed but the brand." The characteristic movement of such a period as the present leads from the material and

scientific, through the artistic and beautiful, to the highest type of spiritual fruitage.

Let us consider for a moment the experience of the human race in the quest for beauty, especially the events of another spectacular transition time, the revival of learning and the renaissance. As an illustration, let me use John Lord's characterization of Michelangelo's first great experiment in the new creative art. John Lord says: "Michelangelo—one of the great lights of the new civilization—may stand as the most fitting representative of reviving art in Europe. He not only created, but he reproduced. He reproduced the glories of Grecian and Roman art. He restored the old civilization in his pictures, his statues and his grand edifices. He revived a taste for what is imperishable in antiquity. As such he is justly regarded as an immortal benefactor; for it is art which gives to nations culture, refinement and the enjoyment of the beautiful."

The New Specifications for Teachers

Throughout the entire history of man the impulse arising from the recognition of what is beautiful, together with the admiration and love of beauty, has led man onward and upward. It has been the spark of divinity that has called man from each lower plane to a higher estate. The law has both an individualistic and a collective result. The dawn man with a first hazy sense of the beautiful got a dim conception of something he was not but desired to be. The tribe or race worked on the artifacts of daily life and the designs used in religious ceremonials, learned to appreciate beauty of line and form, and established a culture. Thus beauty became a key motive to primitive man.

It is a heroic undertaking to attempt to man the battle front for such a frontier, and it is the task of education through its organized institutions to produce both the generalissimo and the rank and file. Who shall be chosen as leaders—competent, adequate, consecrated? To venture a set of specifications for those upon whom the responsibility of a new phase of civilization rests seems daring. But teachers hold council in order to unify the findings of experience and achieve wisdom in their adopted policies. If their suggestions and attempts prove faulty they will be remedied and supplemented by the teachings of able advisers to come.

I am charged with the assignment of a set of specifications indicating the necessary differences in the characteristics of teachers of the new frontier in comparison with those of teachers of the present and past. I believe teachers of the new frontier must have the following characteristics:

1. World mindedness—not internationalism, but a broad-minded nationalism that will approach the

traditions, the achievements and the cultures of other people, and will seek world harmony and progress through mutual understanding.

2. A conception and understanding of the scientific method, and of the approach to the problems of society with the equipment that it provides.

3. A broad foundation in economics, sociology and psychology that will be sufficient to stimulate their development to the same high level of the sciences.

4. An understanding and appreciation of the idealism of the human race as an outgrowth of its search for beauty. There must be meaning for the teacher in this quest, which is as old as history, in its permanence, in its race motives and in its present prevalence.

5. A devotion to public welfare, leading to participation in politics as public business by teachers and pupils.

6. Library mindedness which teaches pupils to love and practice broad reading habits, not only in professional fields, but also in the fields of science, literature and history. The aim should be to make book lovers of pupils in all fields.

7. A knowledge of the means of salvation of the societies of the past and of the forces that contributed to them.

8. A full complement of technical and research equipment on the part of all leaders, not only in the sciences of the present day but also in the important fields of human relations.

A New Creative Period Is Coming

If teacher specifications can be established that are intimately related to the problems society must solve for its salvation, and if the teachers in turn can do what their predecessors have done many times before, that is, with singleness of purpose and high-minded devotion transmit these qualities to their millions of pupils, then a new age of light is dawning.

As the revival of learning and the dawn of the scientific method kindled the flame of modern civilization in the dying embers of the dark ages, so the teaching profession of America and of the other nations of the Western civilization is called upon to apply the same formula and to search for new foundations of culture as an antidote to the incipient downward trend of fatalistic philosophy.

I am optimistic enough to believe that the worldwide faith in education will save the cultures of the present day; and that it will build a new creative period as much greater than the present day as the seventeenth century of sciences and literature was compared to the dark ages.¹

¹Read at the meeting of the Department of Superintendence of the N. E. A., Minneapolis.

Twenty Years of Teachers' Salaries in Arizona

Teachers in Arizona would have been in a better economic position if the salaries they received and the cost of living had remained constant at the 1913 level

By HAROLD W. SMITH, Superintendent of Schools, Glendale, Ariz.

AT A time of economic depression such as the present when the public eye is focused on the cost of government, the cost of education, along with other governmental functions, comes in for its full share of examination, criticism and censure by those who pay the tax bills.

It may even be said that education comes in for more than its share of criticism, and recent experiences indicate that educational expenditures are among the first to be reduced when retrenchments in the cost of government are demanded. The readiness with which educational costs are affected by public demand for an easing of the tax burden is readily accounted for by the fact that, in a large measure, educational budgets are under the control of the various communities through local boards of trustees.

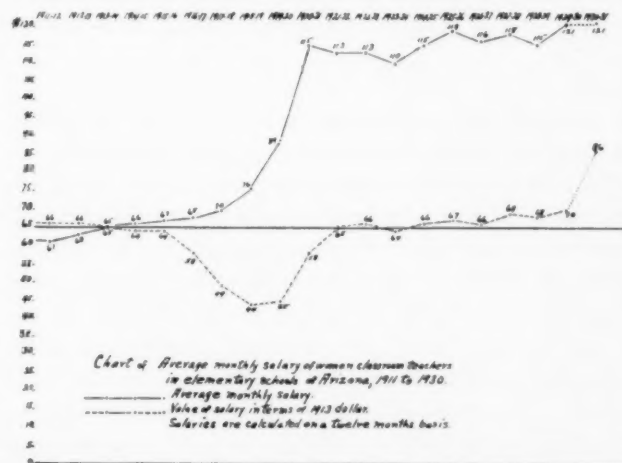
A Strange Situation

Any material reduction of educational budgets necessarily involves a reduction of teachers' salaries. This results from the fact that two-thirds or more of the budget ordinarily goes into salaries, and many other items in the budget, such as insurance, bond interest and redemption funds, are subject to little or no reduction. Furthermore, in periods of economic depression, teachers, with their fixed salaries, are placed in a relatively more desirable position than they ordinarily occupy. It is a strange situation. From time immemorial teachers have been consigned to a relatively undesirable economic position. Any condition that tends to upset this accepted order of things, even temporarily, demands immediate attention. It is, perhaps, not putting it too strongly to say that in times like the present no amount of reduction of educational budgets will satisfy the public demand for retrenchments unless it includes a reduction of teachers' salaries.

During the past year teachers' salaries have been reduced in many communities, and the regu-

lar advance in salaries has been denied in many others. As the time for making new budgets approaches all indications point to more general and more drastic reductions. The situation renders a study of teachers' salaries timely and interesting.

The data on teachers' salaries presented in this study are compiled from statistics found in the biennial reports of the state superintendent of public instruction for Arizona. The index of the cost of living is based on calculations of the U. S. Bureau of Labor Statistics. The index of wages is derived by dividing the average wage per month for the year 1913-14 into the average wage per month for the several other years included in the



study. The purchasing value of salary per month for any year is derived by dividing the actual wages per month for that year by the figure which represents the index of the cost of living for that year. The year 1913-14 is taken as a base, as indicated by the index figures. For the purposes of this study only salaries of women classroom teachers in Arizona are considered. This group of teachers represents more than one-half the entire teaching force in the state, and it is safe to assume that salaries of other teachers in the state have generally followed the same trend.

While teachers' salaries in this state are more generally paid on an eight, nine, or ten months' basis, in this study salaries have been reduced to a twelve months' basis. There are at least two good reasons for doing this. In the first place, teachers must live and attempt to meet the cost of living twelve months each year the same as other people. To take the annual salary and divide it by any number less than twelve and quote the result

AVERAGE MONTHLY SALARY OF WOMEN CLASSROOM TEACHERS IN THE ELEMENTARY SCHOOLS OF ARIZONA, 1911 TO 1930, AND THE PURCHASING VALUE THEREOF

Year	Wages per Month	Number of Teachers	Index of Wages	Cost of Living Index	Pur- chasing Value of Salary
1911-12	\$ 60.99	..	94	92	\$66.28
1912-13	62.70	..	96	95	66.00
1913-14	65.03	..	100	100	65.03
1914-15	66.13	..	102	103	64.20
1915-16	67.15	..	103	105	63.95
1916-17	67.87	..	105	118	57.52
1917-18	70.25	..	108	142	49.40
1918-19	75.79	..	117	174	43.56
1919-20	89.08	..	137	199	44.76
1920-21	115.28	..	177	200	57.64
1921-22	112.57	..	173	174	64.68
1922-23	112.65	1,753	173	170	66.26
1923-24	109.90	1,869	169	173	63.52
1924-25	114.75	1,865	176	173	66.33
1925-26	119.25	1,949	183	178	67.00
1926-27	115.80	2,051	178	176	66.00
1927-28	118.31	2,134	182	172	68.78
1928-29	115.31	2,301	177	171	68.01
1929-30	120.64	2,192	185	171	70.32
1930-31 ¹	120.64	2,192	185	140	86.17

¹Figures for this year not available. The figures for 1929-30 are used for all except the last two columns.

as the teacher's salary per month makes the salary appear much higher than it actually is and, for that reason, much more subject to criticism. In the second place, teachers themselves should think of their salaries on a twelve months' basis. By so doing they can better budget their finances and meet their monthly bills regularly instead of approaching the beginning of each school year with an accumulation of bills from the several months when they received no pay. It need scarcely be said that whenever possible boards should arrange to pay teachers on a twelve months' basis rather than divide the same amount of salary into a smaller number of payments.

The conclusions to be drawn from the accompanying table and chart are fairly obvious. However, attention may be directed briefly to some of the outstanding features which the data present. The data in the table indicate that for eight years following 1913-14 the index of the cost of living was greater than the index of wages. During these years, therefore, the purchasing power of salaries was less than the purchasing power of salaries for the year 1913-14. This fact is presented graphi-

cally by the broken line on the chart shown on the preceding page.

From 1920-21 to 1929-30 there is only slight disagreement between the index of wages and the index of the cost of living. This fact is also indicated by the very slight variations in the broken line representing the corresponding period on the chart. It is worthy of note that the purchasing power of salaries during the nine-year period from 1921-22 to 1929-30 remained very near the 1913 level. Also, actual salaries have fluctuated relatively little since 1920. During the two years immediately following the World War there was a sharp increase in salaries, as indicated by the second column in the table and the solid line on the chart, representing the same period, following which time there has been little increase.

What of Teachers' Future Salaries?

The figures on salaries for 1930-31 were not at hand, so the salaries for that year were assumed to be the same as for the previous year. This was not a correct assumption as it is a known fact that in many instances salaries were reduced. However, the sharp upturn of the broken line on the chart indicates clearly the effect of the increase in the purchasing power of the dollar.

A study of the picture presented by the chart sets forth one surprising fact. That is, notwithstanding increases in salary, taking the twenty-year period as a whole, the women classroom teachers in Arizona would have been in a better economic position if the salaries they received and the cost of living had remained constant at the 1913 level. The same might be said for any year from 1911 to 1915.

What of the future for teachers' salaries? It is of course, useless to predict, but from all indications reductions in salaries will turn teachers' purchasing power back to the 1913 level very soon, and when the cost of living increases they will once more go below that level just as they did following 1913.

"An Introduction to Progressive Education"

An interesting pamphlet entitled "An Introduction to Progressive Education" has recently been published by the C. A. Gregory Co., Cincinnati. Samuel Engle Burr, superintendent of schools, Glendale, Ohio, is the author.

A condensed history of the activity movement is presented and there is included an interesting general statement concerning the new tendencies. Many illustrations add greatly to the value of the booklet.

Schools Enjoyed Definite Gains Despite Panic of 1873

Legislation, public sentiment and financial support united in maintaining and advancing the cause of the public school during the disheartening years of deflation

By ROYCE S. PITKIN, Headmaster, New London High School, New London, N. H.

THE years from 1865 to 1873 were years of frenzied finance, rapid expansion in business and industry and general prosperity. It was another period of railroad development with all of its possibilities for speculation and overexpansion. The mania for making money by gambling in stocks and land again seized the people. As in preceding inflation periods, bank credits were extended far beyond reasonable limits and there was the usual amount of buying on future earnings all over the country.

A new plutocracy came into being, the common people apparently realizing their dreams of comforts and even luxuries hitherto far beyond their reach. Graft and incompetence seemed to be the order of the day in government and many officials indulged in unwarranted extravagances at public expense. To the campaign orators of the times it must have seemed that the day of a chicken in every pot and of two horses in every stable was just around the corner.

But in September, 1873, came news of the stock market crash and the fall of the great banking house of Jay Cooke. These events were merely outward manifestations of the beginning of one of the most severe and disheartening depressions in our history.

Unemployment Reached Tremendous Proportions

In his "Emergence of Modern America," Allan Nevins says that the first disastrous effect was a stoppage of work on the railways. Mileage built in 1874 was less than one-third of the preceding five-year average. As a result, nearly half a million men were thrown out of work. Related industries followed suit, and unemployment increased to overwhelming proportions. Long bread lines were seen in the larger cities, immigration stopped and many aliens left the country. Wages declined sharply. Prices of commodities fell until in 1879 they were only about two-thirds of the 1870 level.

Business failures increased and crime flourished. And as if to add insult to injury, farmers in the Middle Western states, especially Nebraska, were practically ruined by devastating hordes of grasshoppers and a series of prolonged droughts. Not until 1879 was prosperity restored throughout the land.

By 1870 the public school systems of many states had long since passed through the experimental stage. Then, with the depression years came a stern realization of the burden of school support. Hence, the extent to which the American people continued their support during this difficult period indicates the strength of their faith in public education.

Expenditures Increased in Massachusetts

The situation in Massachusetts may be taken as fairly typical of all states not involved in reconstruction problems resulting from the war in the South. In that state, from 1870-71 to 1879-80, the number of persons between the ages of five and fifteen increased 10.8 per cent, while average public school attendance increased 15.6 per cent. It is significant that attendance took a big jump in the year immediately following the panic and another the year after.

As in other periods of economic depression, school expenditures ran ahead of gains in attendance. In the last year of the period the costs, exclusive of capital outlay, stood 34 per cent higher than they had at the beginning, having increased each year of the depression until 1876, when they declined somewhat but did not go back to the level of 1874. These late reductions, however, were more than offset by the decline in prices. Teachers' salaries showed a slight gain after 1876.

The valuation of taxable property in the state increased yearly until 1876, when it began a decline that continued into the next decade. In 1880 it was only 8 per cent higher than in 1870, but the

total amount of taxes assessed thereon was 4 per cent lower than in 1870, having begun falling off in 1876. These figures indicate that expenditures for other functions of government in Massachusetts were reduced before those for the public schools were curtailed, and to a greater extent.

Other signs of educational progress for the period include an increase of eight days in the average length of the school term, a greater number of evening schools in the last years of the decade, a growth of interest in industrial and mechanical drawing and greater sentiment in favor of the employment of school superintendents. Legislation lengthening the minimum school term was enacted in each of five of the depression years, while child labor laws were strengthened in 1876 and 1878. Instruction in sewing was authorized by law in 1876 and the Worcester Normal School was established in 1874. In other words, public education not only held its own while commerce and industry receded, but it made highly impressive gains.

Entire Country Made Remarkable Showing

Although some states did not sustain the Massachusetts record for financial support of the schools, the showing for the country as a whole for the decade seems almost incredible. Analysis of financial statistics of twenty-nine state public school systems shows that their expenditures, expressed in terms of current dollars, averaged 53 per cent more in 1879-80 than in the prepanic year of 1870-71. Expressed in terms of buying power as measured by changes in wholesale prices, there was an increase of 132 per cent between the first and last years of the period. In some states much of this increase was due to growth of population. However, even per pupil expenditures averaged more each year of the depression until 1876-77 than they had in 1870-71. In terms of actual buying power there was an even greater gain, so that in 1879-80, \$1.47 of purchasing power was expended for every dollar expended per pupil in 1870-71. Considering their greatly depleted incomes, it seems clear that the effort made by the American people for the support of their schools was actually much greater during and immediately following the depression than it had been in the days of prosperity.

Another bit of evidence tending to support this conclusion is the fact that in states for which the information was available school revenues increased faster than property valuations on which taxes were collected. In some states school expenses increased while the taxable wealth actually decreased. Moreover, school costs in some states, as in Massachusetts, increased more rapidly dur-

ing the depression than did the amount of taxes collected for all purposes of government. In some commonwealths revenues for general government decreased while those for schools increased. In other instances both items declined, but reductions apparently were made first and in greater degree to the other functions of government. Such policies were in line with the theory of the founding fathers that a free school system for the training of an intelligent and informed citizenry is absolutely essential to the security of democratic government.

Teachers' salaries gained consistently in the first years of the depression, but declined in many states after 1875-76. In almost every case the percentage of reduction in average salary for women was less than for men. This was probably due to the increased number of men entering the profession with the advent of hard times. In fact, what appears in the statistical averages as decreases in teachers' salaries probably meant, in many cases, that new teachers were not paid on the same level as those who were already teaching. In no state showing a decline in average salaries was the decline equal to the drop in the price level for the nation as a whole.

A brief survey of educational developments in a score of states for this decade of economic depression and social unrest convinces one that the cause of the public school was ardently supported throughout the length and breadth of the land. Let us make a partial roll call.

In Maine a compulsory education law was enacted in 1875, a training school for teachers was established in 1878 and the Gorham Normal School began operation in 1879. In nearby New Hampshire a reactionary movement inaugurated in 1874 resulted in the abolishing of the state board of education. This did not affect school support, however, as the expenditures per pupil gained 27 per cent in the period. Another item on the credit side of the ledger was the enactment of an improved child labor law in 1879.

School Terms Lengthened in New York

In Vermont the average length of the school year increased from 116 to 125 days and significant gains were made in the training of teachers. Following the example of its sister state, New Hampshire, the Green Mountain legislature did away with its state board. Connecticut lengthened its average school year from 172 to 179 days. Rhode Island did even better, going from 170 to 184 days. This state also strengthened its laws relating to the reporting of school statistics by the towns, required the taking of a school census in 1878, and founded, in 1877, a school for the deaf. This school

was placed under the control of the state board of education.

School terms were lengthened in New York State, more interest was manifested in industrial subjects, and, in 1876, a law was passed providing for supervision in villages of 5,000 population, state aid being granted for the purpose. New Jersey enacted compulsory school laws for children between the ages of eight and fourteen years and lengthened its average school term. By a provision of the legislature of 1873, Pennsylvania began in 1874 to appropriate not less than \$1,000,000 for public schools. Little Delaware made great strides by lengthening its average school year in the white schools from 132 to 158 days; by the creation of the office of state superintendent of free schools and a board of education by the law of 1875; by raising the amount required in each county in order to receive state funds; by requiring that teachers be examined, hold licenses to teach and attend institutes, and by levying a tax for the support of schools for colored children. Maryland and West Virginia were two other states that lengthened the school year.

Progress Made in Wisconsin

Among the Middle Western states, Minnesota made a change in the basis of distributing state aid from the number of persons of school age to the number enrolled in the schools. This became effective in 1876. The next year a high school law providing for state aid became effective. Apparently because of a change in the method of assessing property in 1874, whereby the valuation was nearly doubled, the state school tax was reduced from two mills to one mill in 1875. In Wisconsin, the same year, school boards were authorized to purchase books to be supplied to the pupils. Free high schools were permitted to be established with state aid upon favorable action by a majority of the voters of a district. In 1877, persons between the ages of twenty and thirty were allowed to become students in the schools. Child labor legislation was also enacted that year and two years later the first compulsory education law for the state was passed. An investigation as to the need of a school for the feeble-minded was authorized in 1877. High school principals in 1879 were required to be graduates of colleges, universities or normal schools. Another important step was that which made tuition free in the University of Wisconsin after July 1, 1876.

Special education also received attention in Iowa where, in 1876, the state established a school for the feeble-minded. Missouri, observing the rapid increase in school expenditures, placed a limit of forty cents per hundred dollars of property valua-

tion on school taxes, except in certain districts. A high school system was started in 1877 by the passage of a law authorizing a suitable number of "schools of higher grade" in the several districts.

Nebraska, it has already been noted, suffered not only from general business depression but also from the effects of grasshopper attacks and severe droughts. Even so, the governor in his message to the legislature of 1875 said:

"You need scarcely be reminded of the depressed condition of affairs throughout the country at large, and therefore the demand for rigid economy. With this precaution, however, other important facts must not be lost sight of. In accepting statehood, important and indispensable duties and obligations were assumed which cannot be evaded: prominent among which are the education of the people, humane provisions for the unfortunate..."

The Nebraska Institute for the Blind was opened that year and throughout the decade new high schools were reported and school expenditures grew by leaps and bounds.

A curious situation prevailed in Kansas where the legislature attempted to economize by reducing the limit on school taxes, by omitting the appropriation for the normal schools in some years, and by reducing salaries of county superintendents while the localities were making greatly increased expenditures for the common schools. A compulsory education law was passed in 1874 and in 1879 a legislative appropriation was made for the establishment of a reform school for boys.

Notable Gains in Every Direction

To the west, in Colorado, a state university was opened in 1877, union high schools were established in 1876, qualifications of teachers were raised, and in 1874 money was appropriated for the education of the mute and the blind. In California the average school year was increased from 123 to 147 days, while the required minimum length of term in order that a district might share in the state funds, was raised from three to six months. A compulsory school law was enacted in 1874, and by 1879 the state school tax had been increased from ten cents per hundred dollars to twenty-six cents, while the limit on the county tax was raised from thirty-five cents to fifty cents.

Thus in the field of legislation, in public sentiment, and in financial support the public schools of America made notable gains through the disheartening years of deflation that followed the famous panic of 1873, and in states where the legislatures attempted to reduce expenses by lowering state school taxes the localities increased their burdens in order that the schools might not falter in the performance of their tasks.

Editorials

Time to Resist

WHILE this is no time for pessimism or lack of courage, no thinking educator can forego a feeling of anxiety when he considers the present state of the public mind.

Retrenchment, of course, is a natural corollary of the period of inflation. Most school authorities have philosophically accepted salary reductions, larger classes, curtailment in maintenance and complete abandonment of capital extensions as an offset to delinquent taxes and reduced budgets. But the end is not yet. As an outcome of unemployment, loss of savings and inability to save their homes and provide a decent living for their families, many of the great middle class of our people from whom the public schools in the past have received loyal support, have lost their bearings and are emotionally in no condition to give the problem of the schools rational consideration. Now as ever when the morale of the people is low, individuals and groups arise offering leadership of doubtful value and panaceas that may be worse than the disease they pretend to cure.

One needs but to read the daily communications to the public press to realize how despair, ignorance and prejudice are being capitalized to serve the ends of this group or that which hopes out of the present chaos to reap advantages for itself at the expense of the general public. No one can predict with any degree of certainty just what will happen to the public schools in the ultimate adjustment but educators may reasonably hope that the changes which do come may be the result of a rational study of the school program and a fair evaluation of the importance of the schools among the various governmental services.

Just now, the reformer is abroad with an ax. He revives the old cry of "out with the fads" and "back to the essentials" without realizing that at one time in our national life, history and geography were called "fads" because they took time away from arithmetic and spelling, and that music, art, physical education and manual arts, the so-called "fads" of two decades ago, have over the intervening years become "essentials" in the minds of most thinking people.

While conceding that police, fire and health services must go on it has been suggested by some leaders that "the schools take a moratorium." It is this attitude plus the disturbed state of the public mind

that should cause friends of the schools to be on their guard.

School people as a group have shown a willingness to cooperate in every intelligent movement toward retrenchment, but any effort to eliminate from the school program essential functions which, with general approval, have been developed during the last two decades, or to restrict education to the limited program of thirty years ago should be stoutly resisted.—*Charles L. Spain.*

Frank Discussion Is Needed of Textbook Problems

IT IS unfortunately true that teachers and school administrators have a disposition to consider textbook companies with a certain degree of suspicion. This disposition prevents a frank and honest treatment of textbook problems.

In most of our teacher training institutions there is strong emphasis on the desirability of teachers depending more on their own mastery of subject matter and less on the initial content of a single book. This emphasis is commendable. It does not imply, however, that textbooks do not have a place in every classroom. In thousands of classrooms it is the textbook that determines the content of instruction as well as the teaching procedures. The slavish dependence of many teachers on the textbook is conceded to be a significant weakness. On the other hand it is undoubtedly true that many teachers gain more effective results because of their reliance on the materials and the suggestions for teaching that are found in some of the better textbooks. In view of the importance of the textbook in our scheme of education, one of the most effective ways for improving the content and method of instruction is to place better textbooks in the hands of teachers and pupils. We need, therefore, to encourage the preparation of textbooks of superior quality, and to develop procedures in the selection of textbooks that will tend to ensure the choice of these superior books.

The basis for a better understanding of the whole matter is provided in the 1931 Yearbook of the National Society for the Study of Education, entitled "The Textbook in American Education." This yearbook contains a series of proposals relating to the improvement of practice in the making and selecting of textbooks. A study of these recommendations should be enlightening both to the field representatives of publishing houses and to members of the teaching profession and should help to establish better relations between them. In my opinion the publishers of textbooks are entitled

to high praise for the quality of their product. It is generally agreed that American publishers are producing textbooks that represent high standards of bookmaking not found in the textbooks of other countries. There is also considerable evidence that reputable publishers in the United States are handling manuscripts more carefully than ever before, so that errors in form and content are detected and corrected before publication. Publishers are rendering a real service to the schools by their meticulous care in these matters. In every field a number of unusually good textbooks and a considerable number of poor ones are now on the market.

One way to prevent the placing of inferior books in the hands of pupils is to establish more scientific methods of selection. Too many books are adopted as the result of salesmanship, and too few books are selected as a result of a critical examination of available textbooks in terms of standards that have been carefully framed. In this period of financial retrenchment the school authorities should exert every effort to secure the best books. A freer and franker discussion of the standards of textbook making and procedures in selection is needed.

In the 1931 Yearbook the committee denounced state uniformity on the score that it gave "rise to questionable practices in connection with the selection and prescription of the texts." The committee also denounced state publication as "unwise, uneconomical and educationally unsound." The committee declared that "the plan of secret committees in textbook selection is not good educational practice." The committee declared in favor of "granting teachers, as the users of textbooks, a voice in their selection," but called attention to the fact "that effective participation on the part of teachers requires special competence." The most important recommendations of the committee were as follows:

1. "The educational interests of the pupil must at all times be the primary consideration in appraising plans for making and selecting textbooks."

2. "The principle is cardinal that the selection of textbooks is the prerogative of the educational personnel of our schools."

Publishers and educators should join in a more active discussion of textbook problems. We need a more critical appraisal of legislation providing for state uniformity. We should have further studies of the question of state publication of textbooks. Certain common practices in textbook selection should be appraised. The disposition to avoid public discussion of textbook problems should be attacked by publishers and school authorities in order that fuller and freer discussion may be secured.—
James B. Edmonson.

Don't Close the Door

AMONG the many schemes proposed by members of state legislatures now in session, under the inspiration of private interest groups, none is so immediately alluring yet so fraught with potential danger to the American open educational door as that designed to increase tuition rates heavily in public institutions of higher learning. Many a legislative committee is considering seriously various plans by which individual tuition rates will be increased to such an extent that the state will carry from only one-third to one-fifth of the entire expense. On the surface these plans are alluring. The legislator can meet the lobby demands for reduced appropriations and still appear to be friendly towards the popular colleges and universities.

The danger in all of these plans is easily discerned. The purpose of low tuition rates in higher institutions of learning under state control has been to permit all to secure educational opportunity although they were not favorably situated economically. At the present time the great mass of people have less available money than under ordinary conditions. If low tuition is essential at any time to maintain an open educational system, it is so at present. The raising of tuition rates, even now much too high in certain state institutions, merely means the placing of another serious obstacle in the way of worthy but economically handicapped young persons. If these plans are adopted, the result will be to place small denominational and other private schools on a par with state supported institutions, partially closing the gates of opportunity to the young.

The profession should examine all these plans with much care and should bring before the people the dangers inherent in them. At no time is sane education of the oncoming generation more needed than today. A much better plan would be the securing by these higher institutions of learning of subventions from the state to assist able students to carry on their educational program. Tuition in worthy cases should be remitted or budgeted on a loan plan over a period of years. There is little danger of loss, if the records of student loans in universities and colleges have any meaning. Losses in the past from loans of this nature have been much less than normal losses in banking. They might be secured further by the allocation of term or life insurance policies to provide against contingencies. Further loans for living expenses might also be provided on this plan.

Beware the legislators bringing gifts in the form of higher tuition rates. Don't close the door of opportunity.

Professional Solidarity

PUBLIC education from the kindergarten through the university is today faced by problems that threaten its continuance in many ways. Not the least serious of these is the lack of solidarity within the profession itself. No friend of education can without being disturbed look on the internal differences, the lack of understanding and the lack of sympathy apparent among the professional groups.

To the lay observer many of these differences appear trivial and unworthy of the teaching profession. They are differences arising from institutional sets regarding quantitative training and also from the traditional attitude of superiority as we proceed from the lower to the higher educational classifications. This social stratification is not only silly and adolescent in character but it is extremely dangerous for all concerned.

The differences in the public schools are largely social or related to organization. The elementary teachers, constituting the largest number of professional personnel, are chiefly the products of normal schools and teachers colleges, representing in the past less than four years of training. Secondary school teachers, thoroughly inoculated with the "degree virus" have created a rather wide social gulf between these two school divisions. The unfortunate imitation of industrial management in many of our schools has not only eliminated to a large extent the old "colleague principle" but has been chiefly responsible for the division of personnel into two groups, teaching and management. These differences have been carried over into professional organizations, both state and national, with the bad result that within many of our professional organizations there is a conflict between the classroom teachers and the administrative groups.

Between the public schools and the higher institutions there are further marked differences. The tradition of academic snobbishness, so apparent in every college community in the "town and gown" differences, is just as noticeable in relationships between public schools, universities and teachers colleges. The typical university faculty member looks with lofty and often expressed disapproval on both the teachers colleges and the public school organization as distinctly inferior. The typical teachers college faculty imitates the university in its attitude toward public education.

A house divided into two parts is in danger from every blast. When divided into five parts, there seems to be little possibility for continued existence in the light of current problems. These social differences and these intellectual snobberies are

petty and infantile. They are distinctly unworthy of a real profession.

The vital current problem is the elimination of these conflicts and the recognition by all groups that the safety of the profession lies in greater solidarity. Whatever our titles or positions, whatever our actual place in carrying on our teaching, we must never forget that these titular and place differences are merely surface differences. The big element is that we are all teachers and that the social safety and our own continuity as a group depend on the degree of professional solidarity that can immediately be developed.

The problem of developing solidarity must proceed by states. A coordinating council, representing minor and institutional interests can be quickly developed within each state. The common problems and the petty differences can be easily smoothed out and all points of view brought harmoniously within a single professional organization. The outcome may result in certain essential modifications of existing state and national organizations around vital professional needs and the elimination of present day imitation of the non-professional lobby organization. Such a course will lead to the restoration and development of the democratic concept that all teachers are equal within the council or the revitalization of the "colleague principle." These changes may be considered as mechanical with respect to organization and the development of a more rational professional program. They will come anyway if the profession is to survive, and the present crisis is an excellent opportunity to seek the common meeting ground and the common good for all engaged in public educational activity.

Social Trends

THE monumental report of the President's research committee, under the chairmanship of Dr. Wesley C. Mitchell, published in two summary volumes under the head of "Recent Social Trends" is worthy of immediate inclusion on the library shelves of every public and private secondary school in the country.

These books represent a careful summarization of thirteen basic volumes containing all of the detailed information gathered during a four-year period by a group of men who rank high in their respective fields. The summary includes many aspects of our social lives which are of great importance in understanding and appreciating current conditions. These two books should be of unusual value in any progressive social studies curriculum.

Happy to Say—By WILLIAM McANDREW

ONE reason nobody loves a fat man is because he obtrudes advertisement of his indulgence, greed and lack of self-control—unlovable qualities.

BEFORE you complain that others have done you dirty, make a list of those who thus complain of you.

LUCK does have a good deal to do with giving life's workman his tools. But, oh boy, look what poor machinery the cathedral builders had.

WHAT is snobbery? Conceit pretending to be superior. What is envy? Failure to see through snobbery. What is content? Knowing when not to care a dam.

AN AMAZING number of people feel that they must find outside of their regular work all the variety and interest expected to make a happy life. A gardener doesn't do so, or a horse trainer, or an artist, or a doctor, or most mothers. I found, after trying many occupations, that teaching combines the attractions of those I just listed. I never knew a real teacher who complained of his work's lack of interest. If you have any who do, they haven't enough work.

"I OWE the world a living" is just as true and a heap more respectable than the common reverse version.

IT TAKES more courage to differ from public opinion than to go to church in your overalls.

NO SCHOOL executive need fail in having new and better ways adopted by his teachers if he doesn't get nasty about it.

THE insolence of a child should hurt you about as much as the pounding of his baby fists. Anyone who is insolent hasn't yet grown up. Before you allow contemptible words to hurt you, estimate the contemptibility of the person who utters them. Croaks from a croaker are O.

UNLESS you enjoy teaching, your children will not enjoy being taught; and you have a situation full of unnecessary misery.

UNHAPPINESS in children is often merely a bad habit. In a teacher it is malpractice.

NO ONE is a failure who knows he isn't.

THE speeches of some school men stiffen the spine. St. Louis Gerling is one of these when he says "A superintendent's conviction on the necessity of freeing school administration from the humiliation of servitude to partisan politicians and forces of wealth must be spoken boldly no matter what the risk. No influence, however powerful, no machination, however subtle, can permanently hurt the man who tells the truth. Even if they could, he must tell it just the same."

I HAVE seen a school board, by decent treatment, enable a secondrate superintendent to improve the schools. I have known school boards to harry a firstrate superintendent into incompetence. But when you see a school man cheerily keeping individual board members from musing into what only the board as board has the right to handle, you see a sample of the spirits of just men made perfect.

YOU have noticed that however good a reason you make for delay, the naked date of payment is what goes into the book. Reputation is made quite regardless of excuses. Why make 'em? The weakness of schools lies in expert excusers.

YOU may believe, if you wish, that anyone who criticizes you adversely is your enemy. But you may get consolation by knowing that an enemy's appraisal is often more nearly true than that of a friend.

DON'T be frightened by the man of superior talent. He may irritate enough people to make his success no more certain than yours, if you keep modestly going.

NOBODY considers his own efforts to do better work contemptible until he makes the mistake of thinking that others think them so. Without any exaggeration, this is one of the most tragic kinds of mind-suicide there is.

IT WILL be a comfort to you to know that, according to Walter Pitkin, the life insurance investigators believe that continued active use of the brain lengthens life. Skilled workers live longest.

SINCE the regard of so many children centers around the teacher, she doesn't need to center much in herself.

News of the Month

N. E. A. Will Hold Convention in World's Fair City

The National Education Association will hold its annual convention in Chicago, July 1 to 7. In view of the educational situation in this country this will be one of the most important conventions in the history of the association, according to Joseph Rosier, president, State Normal School, Fairmont, W. Va., and president of the N. E. A. Problems dealing with economic conditions as they affect public education, educational leadership, the personnel of the teaching profession and new evaluations of education and its results, will provide topics for discussion.

This summer will see Chicago the evaluation center of the world. Nature's bounties from every clime and man's handiwork in every occupation will be displayed for inspection and approval at A Century of Progress Exposition.

"The Evaluation of American Education" is the theme of the convention. President Rosier is asking not only educators but laymen known nationally as interpreters of national life to assist in estimating the value of the various services of the American schools. Among these laymen are Paul V. McNutt, governor of Indiana; Louis Johnson, national commander of the American Legion, and Clarence Martin, president, American Bar Association. Educational leaders who will appear on the programs include Glenn Frank, president, University of Wisconsin; Francis G. Blair, state superintendent of public instruction for Illinois; Florence Hale, editor, the *Grade Teacher*; Charles H. Judd, University of Chicago; Paul C. Stetson, superintendent of schools, Indianapolis, and president, Department of Superintendence; Robert M. Hutchins, president, University of Chicago, and H. L. Donovan, State Teachers College, Richmond, Virginia.

The Joint Commission on the Emergency in Education, appointed by the N. E. A. and the Department of Superintendence, will outline the continued steps in the program initiated at the Minneapolis convention in February. This board of strategy, officially representing the teachers and school officials of the United States, has been busily at work since that time.

Beginning April 12 and continuing through the month of May, prominent American leaders are representing the joint commission in a series of radio programs, informing the public about the crisis in the schools and suggesting means whereby the ideal of free and universal education may be preserved for American children.

The board of consultants will appear in a body before a general meeting of the convention and will hold an executive session at which time they will make plans for continuing work throughout the coming year.

The extraconvention activities will be especially appealing to teachers. Headquarters will be in the Stevens Hotel, from the tower ballroom of which hotel guests have a bird's-eye view of A Century of Progress Exposition.

Physical arrangements for the meeting represent a high peak in the attainment of comfort, economy and convenience for conventioners. Practically all of the meetings will be held within an area of three blocks from the Stevens Hotel.

The convention exhibits will be displayed in the exhibition hall of the hotel. Visitors may check their wraps and parcels in their own rooms while inspecting the beautiful booths which will comprise this exhibit.

Washington Meeting Attacks Vocational Problems

Upon the invitation of the American Vocational Association, representative citizens from all sections of the United States met in a conference on vocational education and the problems of reconstruction, May 4 to 5, in Washington D. C. Besides the American Vocational Association, educational groups participating in the preparations for the conference were the American Council on Education and the National Education Association.

The purpose of the conference was to plan a program of vocational education to care for the boys and girls who are leaving school and joining the ranks of the unemployed, and for adult workers who have been displaced by machines and who must train for new jobs. Readjustment to emergency employment conditions was an important

News of the Month (Cont'd)

feature of the discussions of the conference, which centered around such subjects as the return of city workers to the land and the preparation of the farmer for competition in the intensive struggle ahead in agriculture.

The conference consisted of three delegates each from representative national organizations dealing with agriculture, commerce, labor, industry, education, home making and civic and social welfare. Approximately forty-five organizations representing these fields were invited to participate in the conference.

Individual representatives at the conference were state superintendents of public instruction, state directors of vocational education and fifty delegates selected at large from among leaders in the vocational fields covered by the conference.

Arrangements for the meeting were made under the direction of John A. Lapp, secretary of the conference and director, National Rehabilitation Association, and Ray Fife, president, American Vocational Association, and state supervisor of agricultural education, Columbus, Ohio.

Special Courses Offered at Iowa Summer Session

Child development and parent education courses planned for the interests of graduate students, teachers, social workers, leaders of study groups and parents will be offered during the 1933 summer session, June 9 to August 24, by the Iowa Child Welfare Research Station and cooperating departments. The courses will include various phases of the development of the child from infancy through adolescence and will represent the fields of psychology, statistics, physical growth, preschool teaching, child study and parent education, character education, the child and the home, nutrition, and genetics.

Opportunity for carrying on research will be provided both terms. The four preschool laboratories of the station will be open during the first term, affording an opportunity for observation and experimental work. The station carries on investigations in nutrition, physical growth, infant and child psychology, childhood education, mental hygiene, parent education and character education. Excellent facilities are offered for research and scientific study of the normal child in these fields.

Elmira Plans New Junior College

Arrangements have been made for a junior college for boys in connection with Elmira College, Elmira, N. Y., according to Prof. John C. Pomeroy, head of the science department. Although the entrance requirements will be the same as at any other chartered college, the fees will be lower, according to the plan. It is intended primarily for young men who, because of financial conditions, are unable to go away to school. An opening has been tentatively set for next September.

School Busses Will Carry Pupils to World's Fair in Chicago

Arrangements are being made by H. L. Allen, superintendent of schools, Ramona, Okla., to transport 600 pupils and local citizens to A Century of Progress Exposition in Chicago this summer by using six school busses. Mr. Allen plans to take two trucks at a time, using fifteen days for each trip. One truck is to carry twenty boys, the other twenty girls. They plan to carry their food and camping equipment along.

It is estimated that the cost of transportation will be \$50. This will mean \$2.50 a pupil. Mr. Allen estimates that \$10 will pay all expenses per pupil, including transportation, food and admission. A number of parents will accompany the pupils as chaperons.

Military Schools Defended as Leaders in Peace

Military schools were defended by Col. William J. Donovan, republican candidate for governor of New York State in the last election, speaking at a reception of the Culver Alumni Association of New York City in honor of Brig. Gen. L. B. Gignilliat, superintendent, Culver Military Academy, Culver, Ind., and Mrs. Gignilliat.

Graduates of military schools belie their training by becoming the least militaristic of any group of persons, Colonel Donovan said, because they appreciate only too well the horrors of war.

General Gignilliat and Lieut.-Commander Charles Hann, Jr., vice president of Fidac, allied World War veterans' association, also spoke.

News of the Month (Cont'd)

U. S. C. Completes Program for Annual Summer School

Final arrangements have been made for the 1933 summer session of the University of Southern California. The first term runs from June 21 to July 28, and the second term from July 31 to September 1.

With Dr. Lester B. Rogers as dean, the twenty-eighth annual summer school offers some 400 courses in twenty-five departments, namely, architecture and fine arts, chemistry, comparative literature, economics and commerce, education, English, French, geography and geology, German, history, journalism, Latin, mathematics, music, philosophy, physical education, physics, political science and international relations, psychology, religion, sociology, Spanish, speech and zoology.

Ninety-nine separate courses deal with modern methods of education—elementary, secondary, junior college and university—scheduled for teachers and administrators seeking either professional or personal improvement during vacation months, or desiring summer college work granting credit toward advanced degrees.

Innovations this summer at U. S. C. include courses for teacher-librarians, the first step in the establishment of a new graduate library school at the university. Among eighteen new courses is one in "Radio Speech."

Too Many School Board Members, U. S. Report Shows

There is approximately one board of education member for every two teachers in the United States, according to a report made public by the U. S. Office of Education on "School Administrative Units." W. S. Deffenbaugh and Timon Covert, who compiled the figures, indicate further that "there are 127,000 school districts for administrative purposes in the several states. Control of educational affairs is vested in approximately 424,000 members of boards of education or school trustees. These school members elect teachers for 839,879 public school teaching positions so that there is approximately one school board member to every two teachers."

In twelve states the report points out, there are more school board members than teachers. These

states are Arkansas, Idaho, Kansas, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, Oregon, South Dakota and Wisconsin. Of the 127,000 school districts, it is estimated that 109,000 are small common school districts; 6,000 are town or township districts; 7,000 are independent districts or city school districts, and the remaining 5,000 are consolidated, township high school, county and other types.

Two Schools Offer Summer Courses in Education by Radio

Teachers College, Columbia University, and the Ohio State University are the only institutions of higher learning in the United States that are offering summer courses in the educational use of the radio, according to information recently released by the radio section, U. S. Office of Education.

Those desiring information regarding these courses may obtain it by addressing the institutions or C. M. Koon, specialist in education by radio, U. S. Office of Education, Washington, D. C.

Special Bulletins on Education of Mentally Retarded Pupils

Two significant bulletins on the education of mentally retarded children have been published by Ohio State University. The author of both bulletins is Charles Scott Berry, professor of educational psychology and director of the Ohio Bureau of Special Education. One of the bulletins, "How the Teacher May Help the Exceptional Child," is for the special benefit of the classroom teacher. The second bulletin, "Public School Education of Mentally Retarded Children," is devoted to a consideration of the several schemes of organization, and is designed for the use of principals and superintendents. While prepared primarily for Ohio, its appeal is by no means limited to the state. The problems discussed are those common to special education in every state.

Mr. Berry was subchairman of the White House Conference Committee concerned with this problem and is nationally known for his achievements as director of special education in the public schools of Detroit.

A Marked Reduction *in the prices of 16-mm.* Eastman Classroom Films



Full reels formerly \$35 are now \$24
 $\frac{3}{4}$ reels formerly \$28 are now \$18
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SINCE the initial announcement of their production, in 1928, Eastman Classroom Films have built up an enviable reputation among school authorities...not only in the United States but also in more than 30 foreign countries. Because of this wide acceptance, coupled with lower production costs and the anticipation of a steadily growing demand, Eastman Teaching Films, Inc., is now able to announce an average re-

duction of more than 30% in the prices of its 16-millimeter films.

Effective April 15, 1933, all of these films will be billed as follows: full reels (approximately 400 feet 16-mm. film), \$24; three-quarter reels, \$18; half reels, \$12; quarter reels, \$6. All prices include prepaid transportation. Substantially lower, the new prices bring the ever-growing list of Eastman Classroom Films within easier reach of schools.

The latest descriptive list of Eastman Classroom Films shows the new low prices, and briefly describes all films completed up to the present time. Send for your copy of this interesting booklet. Address: Eastman Teaching Films, Inc. (Subsidiary of Eastman Kodak Company), Rochester, N. Y.

EASTMAN *Classroom* FILMS

News of the Month (Cont'd)

Dr. Charles McKenny Retires

Dr. Charles McKenny, president, Michigan State Normal College, Ypsilanti, for the past twenty-two years and editorial consultant, *The NATION'S SCHOOLS*, has resigned on account of ill health. Doctor McKenny's resignation was accepted at a meeting of the state board of education held in Detroit on May 8, at which time he was made president emeritus of the college.

Doctor McKenny has been an outstanding leader in teacher training in this country. Successively president of Michigan Central State Teachers College, Mt. Pleasant, president of Milwaukee Normal School and then head of the Ypsilanti institution, Doctor McKenny has a record of more than a third of a century as executive head of teachers' colleges. He was one of the organizers of the American Association of Teachers' Colleges and served twice as its president. The University of Wisconsin and Miami University have recognized his services by the award of honorary degrees.

Doctor McKenny will be succeeded as president of Michigan State Normal College by John M. Munson, president, Northern State Teachers College, Marquette, Mich. Mr. Munson in turn will be succeeded at Northern State Teachers College by Webster H. Pearce, who retires July 1 as state superintendent of public instruction for Michigan.

Four "New" Summer Schools Will Be Held This Year

Summer institutes with progressive programs for teachers and with progressive school sessions for boys and girls will be held on four campuses in 1933 under the auspices of the Progressive Education Association.

At Syracuse University and Buffalo State Teachers College in New York State, the College of Charleston, Charleston, S. C., and Alabama College, Montevallo, Ala., institutes with demonstration schools are being established. The teachers are to be drawn from a wide variety of public and private "new" schools.

Syracuse University is offering demonstration work in all six years of the junior and senior high school with classes in practically every high school subject except mathematics. It is also setting up demonstrations of first, fourth and sixth year

elementary school work. The other three institutions stress work on the elementary school level, particularly in reading, group and creative activities and science. Each of the four institutions plans courses in organizing, administering and supervising progressive schools for principals and school superintendents, as well as in the philosophy and techniques of progressive education.

Parents and Teachers to Consider Safeguarding Education

May 17 is the date set for the metropolitan spring conference of the New York State Congress of Parents and Teachers, the County Center at White Plains, N. Y., having been chosen as the place of meeting. The theme of the conference will be "Safeguarding Education," and Dr. Arvie Eldred, executive secretary of the New York State Teachers Association, will be the principal speaker.

Free Health Examinations Will Be Given Chicago Pupils

Free health examinations for Chicago school children will be made available by members of the Chicago Medical Society during two weeks in May as part of the doctors' contribution to the national child health program recently proclaimed by President Roosevelt.

A citywide health survey will be conducted by the medical society with the cooperation of the board of education and the Parent-Teacher Association. During the same period the Chicago Dental Society will offer free dental examinations to the school children. Children in the parochial schools of the city will also receive the free examinations.

These arrangements, inaugurated last year on a smaller scale, make possible the yearly examinations formerly given by the city health department but discontinued because of the lack of funds.

Following the plan used last year, examination cards will be handed out to children in the schools. The child will then go to the family physician, who will list any physical ailments or defects he finds, so that parents may have a record of the examination. Parents or a guardian must accompany the child to the doctor's office.



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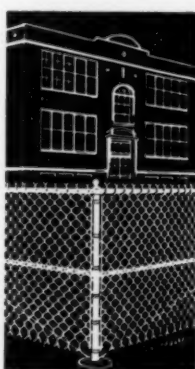
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In the Educational Field

DEXTER E. CALDWELL, superintendent of schools, Point Place, Ohio, died on April 13, from pneumonia. MR. CALDWELL had been superintendent of the Point Place schools since 1928.

H. A. BURKE, who has been in charge of the Gothenburg, Neb., schools for the past twelve years, has been named superintendent of schools, Kearney, Neb., to succeed the late O. A. WIRSIG.

EDGAR DUBS SHIMER, formerly associate superintendent of schools, New York City, who retired nearly ten years ago after forty-eight years' service in the city's school system, died recently. He was eighty years old. MR. SHIMER retired on August 31, 1923, after serving during the last months of his career as acting superintendent of schools. Three years earlier he had been chosen associate superintendent.

R. D. BAIRD has been elected superintendent of schools, Blencoe, Iowa. MR. BLAIR will assume his new post next year.

HERBERT F. TAYLOR, superintendent of schools, Manchester, N. H., from 1916 until 1923, died recently in Chatham, N. J. MR. TAYLOR was sixty years of age at the time of his death.

J. L. FORTNEY, superintendent of schools, Ross County, Ohio, who has served the state's public schools for forty-five years, will retire on August 1.

WILLIAM R. SNYDER, superintendent of schools in Ledyard and North Stonington, Conn., died recently at the age of seventy-three years. MR. SNYDER served as superintendent of schools, Stonington, Conn., for fourteen years. He continued his work in the public schools of Ledyard and North Stonington after resigning the post of superintendent at Stonington.

PAUL MORRIS has been elected superintendent of schools, Benkleman, Neb., to succeed C. E. ANDREWS, who was not an applicant for reelection.

DR. ZENOS E. SCOTT, superintendent of schools, Springfield, Mass., for the past ten years, has resigned to become superintendent, State Teachers College, Bridgewater, Mass. DOCTOR SCOTT's resignation will take effect on September 1.

DR. DAVID C. TODD has been elected president of the board of education, St. Louis, to succeed MYRT A. ROLLINS.

W. B. SMITH, superintendent of schools, Twin Falls, Idaho, has been elected president of the Idaho Education Association.

J. L. IRWIN has been named superintendent of schools, Ashland, Neb., to succeed R. A. SQUIRES. MR. IRWIN has been superintendent of schools at Mitchell and Kimball, Neb.

W. GRANT FANCHER, superintendent, Essex County Training School, Lawrence, Mass., has resigned, effective July 1. MR. FANCHER has been superintendent of the institution for thirty years.

CLARA D. McDONEL, superintendent of schools, Granite County, Montana, died recently at her home in Philipsburg. MISS McDONEL was serving her third term as county superintendent.

ARMAND KERLAOUEZO, superintendent of schools, Plains, Mont., expects to spend the next year studying at the University of California.

RALPH E. SCUDDER has been elected superintendent of schools, Glendive, Mont., and principal of the Dawson County High School.

I. S. HINSHAW has resigned as superintendent of schools, Ada, Okla., and will be succeeded by B. R. STUBBS, effective June 1. MR. STUBBS will continue as principal of the Ada High School in addition to serving as city superintendent.

F. O. WOERNER has been elected superintendent of schools, Logan County, West Virginia, to succeed H. K. BAER, who has assumed the duties of state supervisor of rural schools.

DR. PAUL F. VOELKER, late president of Battle Creek College, Battle Creek, Michigan, has been elected superintendent of public instruction for Michigan.

OSHER SCHLAIFER, superintendent of schools, Dundee, Ill., for the past seventeen years, has resigned from his position.

DR. MILTON D. PROCTOR, department of education, New York University, has been elected president, Westbrook Seminary and Junior College for Girls, Portland, Me. DOCTOR PROCTOR was formerly superintendent of schools, White Plains, N. Y., and Uniontown, Pa.

DR. G. W. ROSENLOF, Nebraska state department of education, has been elected president of the National Association of High School Inspectors and Supervisors.

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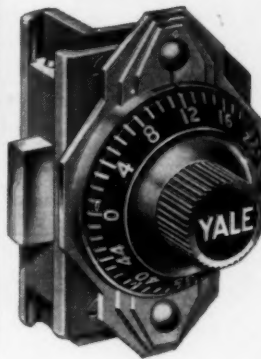
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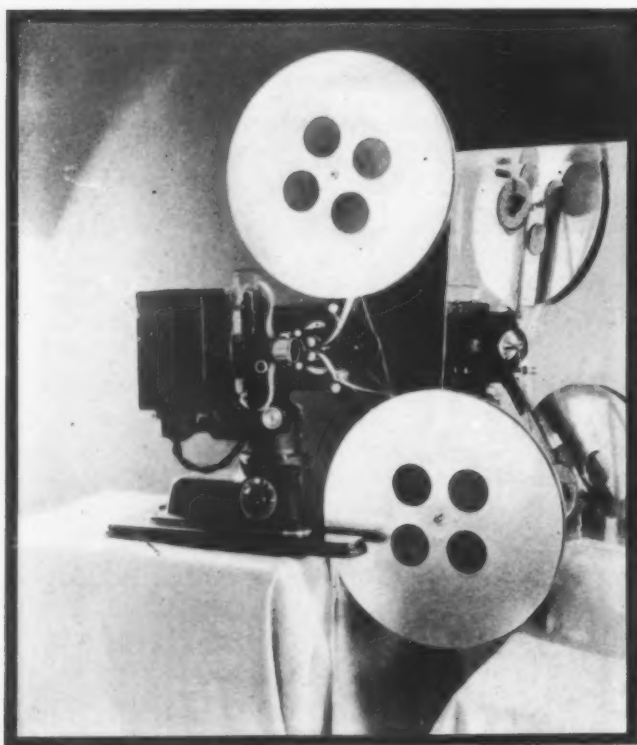
Your School— Its Construction and Equipment

A Department Conducted by CHESTER HART, B.Arch., Chicago

A Full Hour Program With the 16 m/m Projector

Users of 16 m/m motion picture projector machines have been in need of facilities that would permit the use of sufficient film length to give an hour's program without changing reels. In the past, continuous projection has offered difficulties in controlling and equalizing the film tension so as to prevent serious damage to the film, especially when the greater part of the film weight became concentrated on one or the other of the two reels.

The Victor Animatograph Corporation, Daven-



port, Iowa, has produced a 1,600-foot Victor Projector which will give an hour's showing. The problem of equalized tension is cared for by an intermediate take-up unit which employs the slip friction principle to control the tension of any size reel automatically.

The regular Victor Model 10FH Projector body and base are used in this new model. The 1,600-

foot reel arms with pulleys attached, an intermediate take-up unit, a cut-out baseboard and a special carrying case may be obtained as attachments and adapted to any 10FH or 10RH projector now in use without interfering with its use as a regular 400-foot machine. Changing the reel arms and attaching the intermediate take-up unit can be quickly accomplished by simply removing four screws.

A new type of spreader lens to give more brilliant illumination for still projection has been adopted for the Victor Model 10 series in place of the gold screen previously used.

The spreader lens is mounted in a safety shutter which automatically drops into place between lamp and film when the operating lever is moved into "still projection" position. By dissipating heat with the spreader lens and automatically increasing the flow of air through the lamp house, it is possible to show a still picture without danger of blistering the film.

A Waterproofing Material for Use on Wet Walls

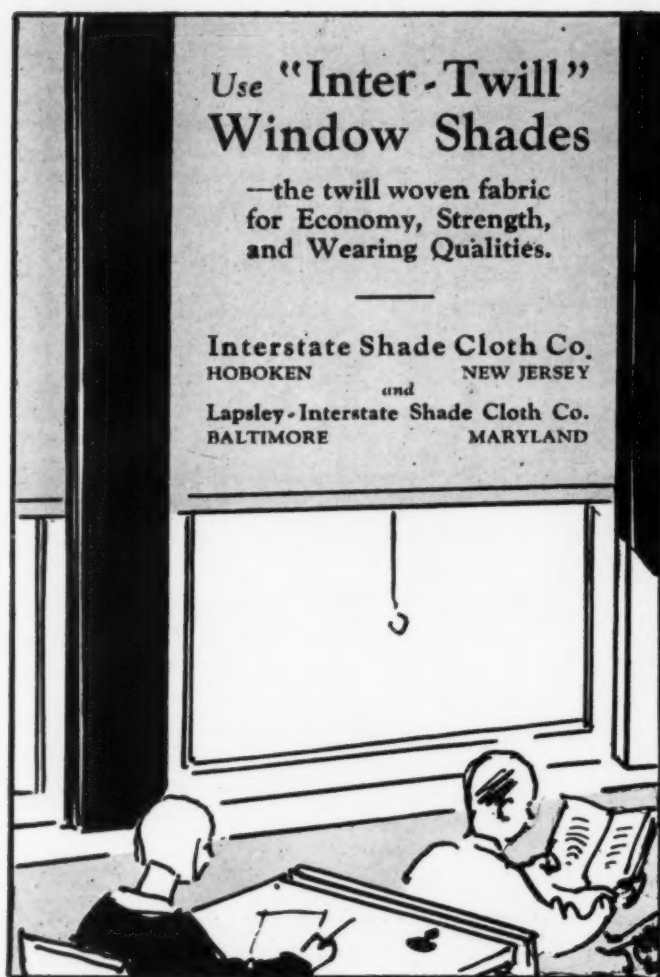
Leaking walls should be repaired the moment they are discovered, but this has been difficult or impossible to do because the trouble usually arises during the rainy seasons of spring or autumn. Yet it is important to take immediate steps to waterproof the walls before serious damage is done to the building. Walls seldom have a chance to dry thoroughly except in the summer, and therefore it is important to have available a waterproofing material that may be applied to wet walls.

A new product, All-Weather Masterseal Waterproofing, made by the Master Builders Company, 7016 Euclid Avenue, Cleveland, may be applied to either wet or dry walls at all temperatures down to freezing. The application of waterproofing as soon as the trouble is discovered will save large repair bills by preventing further damage through the spalling of masonry, the disintegration of mortar, the crumbling and staining of plaster and the warping of woodwork. A waterproofed wall

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is also more resistant to the corrosive action of smoke, dirt and fumes, and is protected for an indefinite period against stain, efflorescence, mildew and other disfigurements.

All-Weather Masterseal Waterproofing may be applied to stucco, brick, concrete, stone and cast stone, provided the surfaces are clean and all dirt and loose particles have been brushed off. The waterproofing is sprayed or brushed on to the surface and then brushed out thoroughly with a stiff bristled brush. Except under extraordinary conditions a one-coat application is sufficient. The color of the surface so treated will be darkened slightly, but it does not appear greasy, and the waterproofing is colorless and transparent. The waterproofing is not inflammable, thereby eliminating any fire hazard. On the average brick wall the covering capacity is 400 square feet per gallon, although some variance from this will be found depending on the nature and texture of the surface that is to be treated.

An Electric Machine for Grading Objective Tests

The correction of objective tests is an admittedly tedious task. The results achieved by having a teacher make these corrections are not commensurate with the time required to check each answer individually. The energy and enthusiasm needed by the teacher for actual teaching work are reduced when she is required to correct objective tests. The realization that a machine might be used for this work has led to the development of an electrical test corrector.

The Markograph is a device for correcting examinations, and is made by the Electrical Test-



Correcter Co., 335 Marquette Street, Ironwood, Mich. It is simple to operate, and a clerk or a pupil may operate the machine with absolute accuracy. It has been found that pupils are able to

correct tests at the rate of seven a minute without practice in operating the machine.

The tests are corrected by placing the test papers in the machine one at a time. The machine is then closed, and numbered lights flash on for every correct answer. The hand on the dial indicates the total number of correct answers for each test paper.

The objective test in a hektographed, mimeographed or printed form is given to the pupil together with an answer sheet. The pupil indicates his answer on the answer sheet by punching out a perforation lettered similar to the chosen answer. This is the only change from the ordinary method of conducting tests. When the answer sheet is slipped into the Markograph each correct answer registers as a light and as a unit on the dial, due to the fact that an electrical contact is made through the hole made in the paper by the pupil. No electrical contacts are formed where the answers are incorrect.

The answer key which corresponds to the answer sheet is quickly set by dropping a metal peg into the hole above each correct answer. This key can be set in a minute's time.

A machine of this kind is valuable in releasing teachers from routine work. This is an especially important matter in schools where budgetary economies have necessitated large classes, and pupils and teachers need every moment that can be made available for constructive work.

New Cloth Ensures Clean and Colorful Books

Book cloth that is intended for hard usage and is particularly adapted for binding school books has been announced by E. I. Du Pont de Nemours and Co., Inc., Fabrikoid Division, Newburgh, N. Y. This Fabrikoid PX Cloth has a pyroxylin sealed surface that resists dirt adhesion. Moist or sticky hands have no tendency to adhere to the pyroxylin treated cloth. The cloth is durable, verminproof and water repellent, and may be cleaned with mild soap and water. These qualities tend to keep the books in their original condition of cleanliness and color.

PX Cloth prints and stamps in regular bindery practice, and end sheets adhere with regular book-binder's glue. The cost of binding a book with this cloth is no greater than a binding in any good grade of book cloth.

A variety of colors and textures may be obtained, such as linen effects, solid colors, textured and vellum finishes.

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